

A PENTON PUBLICATION



## Depreciation Reform in '58?

Chances fairly good for Congressional action this summer --Page 62



## **Equipment Price Stability To Hold**

Costs rise but weak demand forces most builders to hold line
—Page 68



## **How Positioning Ups Profits**

Welders learn how to turn 'tilt' into faster production --Page 104



## Better Packaging Layout Pays Off

Cost crisis problem led to a \$33,000 annual saving

—Page 100

## Stainless Outlook Brightens a Bit

Volume edges up now, may jump if auto sales improve

--Page 151



## "B&W's Mr. Tubes gives me the 'extra' help I need to engineer for profit!"

YOU can engineer for profit by keeping your piping costs as realistic as possible. Specifying and buying welding fittings and pipe, especially the alloys, can be pretty tricky. Admittedly, most alloy jobs are, inherently, both complex and expensive. Any error in judgment can throw costs way out of proportion. That's why it pays to call in B&W's Mr. Tubes. Put him on your planning team . . . he's the man that can help make your specifying decisions more certain.

As your local B&W representative, Mr. Tubes is well qualified to give you the kind of technical help you need to hold your alloy piping costs to a minimum. He can offer dependable help in selecting the most economical grades and sizes best suited for your end-use applications.

And, through Mr. Tubes, you can save both time and money by utilizing B&W's "one-source" supply. You get a matched piping system — both pipe and

fittings, in the materials you need — when you need them. Buying and delivery are more closely controlled, too. Check with Mr. Tubes on your next job. He can be reached at any B&W Tubular Products Division District Sales Office. The Babcock & Wilcox Company, Tubular Products Division, Beaver Falls, Pennsylvania.



## They've Cleared the Last Hurdle



Here are some Bethlehem drop forgings just about ready for shipment. That signed and dated tag means that they have taken the last of many hurdles. They've survived every check-up and inspection.

Matter of fact, the check-ups began even before there were any forgings. The steel was subjected to thorough metallurgical analysis long before it reached the forging hammers. Then, at every step along the route, the job received another careful going-over. Finally, after hardness tests, dimensional checks, and surface inspection, the finished drop forgings rated the "Passed Inspection" tag.

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On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



BETHLEHEM STEEL



# Just saved: 61 separate drilling operations — and not a single tolerance needs checking

Dimensions and placement of everyone of the 63 holes in this Cleaver Brooks boiler door must be right on the nose. Tolerances of the dished stamping—plus or minus ½6" on both the 60" diameter and flatness across the flange—must be held even after the holes are pierced.

COMMERCIAL meets all of these exacting requirements. It designed and turned out the forming and piercing dies, forms the heavy stampings and gang pierces the holes. And it's the same story all the way with the 36" and 48" diameter dished boiler doors COMMERCIAL also manufactures for Cleaver Brooks.

Only the first gang-pierced boiler door requires a tolerance inspection. After that, as in the case of the 60" diameter stamped door, it's 63 holes at one crack—all with identical, near-perfect size and location tolerances every time. And at no time do the actual

stampings go beyond the limits of their specified plus or minus ½6" tolerances.

Here's the kind of accurate, cost-saving metal forming service you may want to consider the next time you're in the market for a medium or heavy stamping—long or short run. Just send along a blueprint or complete information on your requirements. Our engineers will cooperate fully. Address Commercial Shearing & Stamping Company, Department L-22, Youngstown 1, Ohio.

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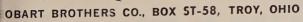
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## These quality features add up to big savings!

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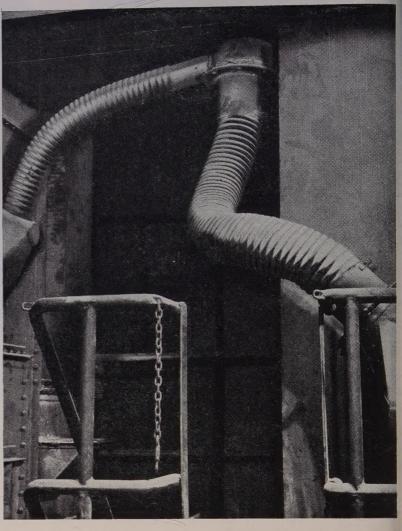


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"One of the world's largest builders of arc welding equipment"







## Hose at one-third the cost outlasts pipe-4 to 1

Carrying off large quantities of abrasive dust had always been an expensive problem at this Northwestern plant. For it quickly ate through heavy-gauge pipe—especially where the ducts had to make sharp turns. In fact, 8 to 10 months was the limit for any pipe they tried.

But the G.T.M.—Goodyear Technical Man—figured he could top that with HD Industrial Vacuum Hose. It not only cost much less than the special pipe, but could be installed far more quickly and easily. And when worn, it could be rotated to distribute

wear. But here's the real pay-off: at last report, the G.T.M.'s hose was still going strong after 3 years' service.

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	auto on dep	Accidion.	
PECIAL	FEATURE		62
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We need your help to make congressmen understand the need for revision

DITORIAL



REP. WILBUR D. MILLS

Chances are fairly good that Congress will take some action on depreciation at this session. The House Ways & Means Committee, headed by Representative Mills, is expected to start considering revisions the week of June 2.

#### WINDOWS OF WASHINGTON 64

Distress over Venezuela's riotous reception of Nixon may bring three-point economic program for Latins.

#### MIRRORS OF MOTORDOM ... 71

Motordom is trying to meet buyers' demands for economy cars without slashing the big car markets.

#### THE BUSINESS TREND ..... 75

Steel's industrial production index at highest point in seven weeks.

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STEEL, the metalworking weekly, is selectively distributed without charge to qualified management personnel with administrative, production, engineering, or purchasing functions in U. S. metalworking plants employing 20 or more. Those unable to qualify, or those wishing home delivered copies, may purchase copies at these rates: U. S. and possessions and Canada, \$10 a year; all other countries, \$20 a year; single copies, 50 cents. Metalworking Yearbook issue, \$2. Published every Monday and copyright 1958 by Penton Publishing Co., Penton Bldg., Cleveland 13, Ohio. Accepted as controlled circulation publication at Cleveland, Ohio.

Markets-

Index available semiannually. STEEL is also indexed by Engineering Index, 29 W. 39th St., New York 18, N. Y.

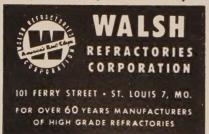
MARKET OUTLOOK 149



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## behind the scenes

#### **Now Hear This**

Thinking is still being done in America -good, sound, constructive thinking, too. Our only complaint is that these thoughts are circulated where they are already accepted, instead of where they will do the most good. For an instance, as we used to say in the hills, Charles M. White, chairman, Republic Steel Corp., got off some potent remarks before the AIME at Cleveland recently. He spoke about the appalling number of delusions held by an appalling number of persons: Delusions that bigness is badness; that corporate profits are bad; that dividends are unearned; that only the workingman increases productivity; that the laboring man is underpaid; that unions are weak; that machines are a threat; that one can get something for nothing; that America cannot be surpassed.

E. S. Bowerfind, director of public relations at Republic, was kind enough to send us a copy of Mr. White's address following a hint in this column. The problem now is, how can Mr. White's thoughtful analyses be circulated among

the deluded?

#### **Test Backfires**

How are we going to plant these thoughts in the minds of housewives, painters, professors, doctors, fiddle players, crapshooters, college students, and average voters? How can we reach the American mind and devise a test to determine its ability to evaluate? This suddenly reminds us of Associate Copy Editor Glenn Dietrich-and it's fortunate, too, because we have been straying into deep water, and ol' Shrdlu is far from being 10 ft tall, mentally or physically. When Glenn was considered for the job, the editors of Steel cooked up a sample news story, and purposely sprinkled it with 33 errors. Glenn took the test, found the planted errors, and revealed three additional ones! Naturally, he got the job.

Copy Editor Harry Chandler later compiled an editing test, a 28-line story containing 36 errors. Editors who volunteered to take the test were allowed to grade themselves, so, judging by the glum expressions following exposure to Chander's fiendish exam, all scores will go separately to the grave. Ol' Shrdlu caught about three mistakes, so there is a strong possibility that he will revert to his old job of window washer, sec-

ond class.

#### An Index Is Born

Last week STEEL'S Market Outlook page assumed a new look. Neatly boxed in the lower right corner an index to markets and prices appeared. This index

will become a permanent fixture. Associate Editor Frank Briggs was the accoucheur, so we asked him about his baby.

"Mr. Briggs, is it true that you assembled the markets and prices index? Won't it be a little difficult to list page numbers in advance? Suppose they run a story on structurals at the last minute. How are you going to hold the presses while you are listing the page number in your private index?"

Mr. Briggs smiled tolerantly. He has been with STEEL many years, and in the course of his long and honorable association, he had listened to many silly

questions

"The form containing the Market Outlook," he explained patiently, "goes on the press at 1 p.m. I simply go down at 11, check the new stories and prices, and mark the page numbers across from the proper items."

"And then what?"

"Then I have the type set," said Frank. "Don't you think that's a good idea?"

We were forced to admit that it was an excellent idea. His logic was stupendous.

"The type is still warm when we drop it in the waiting slot," continued Briggs, "and that's all there's to it. I usually go out and eat lunch after the form goes off."

Possibly strip steak with scraps, served on plates, and washed down by Coke.

#### Over Muscovite Copy Desk

Contestants who have requested entry blanks in STEEL'S Cost Crisis Contest are urged to send in their completed forms as soon as possible. The deadline is June 15, and everybody knows how time flies, or fugits, or something like that. And while you're writing, for relaxation play with this:

Here is an imaginary story; we want you to write a headline for it, using five words, going from one to five syllables, and using the letter S to begin the first word, T the second, E the third, E the fourth, and L the fifth. (Example: Six Tes-ty Ed-i-tors E-rad-i-cate Lex-i-col-o-gist.) The story: It seems that a large but definite number of Russians, all of whom were skillful and prudent in matters of expenditure, were made lawfully correct and legally respectable at a mass ceremonial.

Now, write that headline!

Shrdlu



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In buying power industrial trucks, look beyond initial costs—and you'll discover these overwhelming advantages of ELPAR electric trucks:

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Messer has this experience. Messer engineering has designed and installed over a thousand oxygen-producing plants all over the world—183 in the United States alone. Get

an unbiased, authoritative analysis of your oxygen-nitrogen-argon requirements from American Messer.

#### WRITE FOR INFORMATION

We'd be happy to answer any questions you may have regarding the production of oxygen. No obligation, of course. Just write

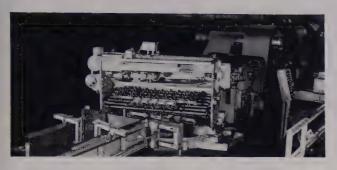
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## Cincinnati Shear swivels for mitre cuts at Budd



This Cincinnati Shear is an integral part of an automatic decoil and shear line at The Budd Company's Gary, Ind., plant. It is used for straight and mitre shearing of coil stock into sheets.

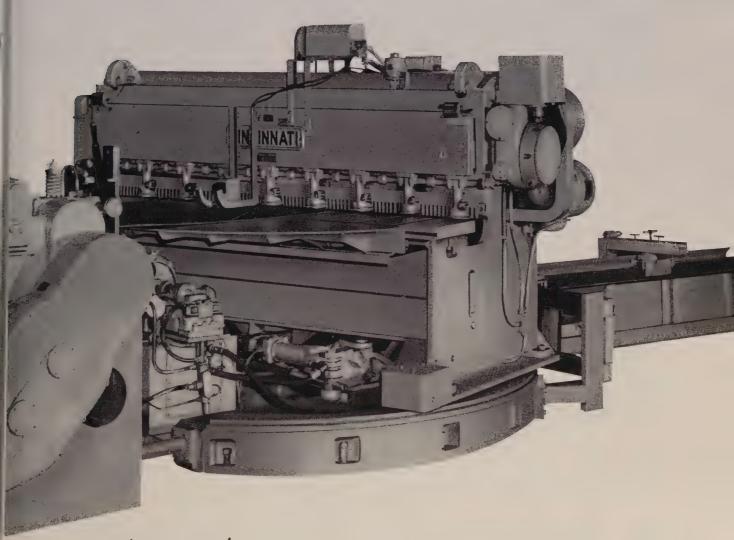
Mounted on a swiveling base, the shear can be ro-

tated 22½° to either side of center, so the operator can pre-set the desired angle of cut.

Accuracy must be within 1/8" per 80" of feed. Sheet widths range from 24" to 72" and thickness from 21 to 16 gauge (.0349" to .0625"). Since the operation must be automatic and continuous to be economical, Cincinnati dependability is a vital asset.

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Complete details on Cincinnati All-Steel Shears are included in Catalog S-7R. Write to Dept. C.



Shapers / Shears / Press Brakes

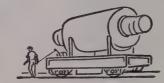
THE CINCINNATI SHAPER co. Cincinnati 11, Ohio, U.S.A.



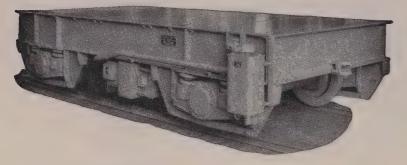
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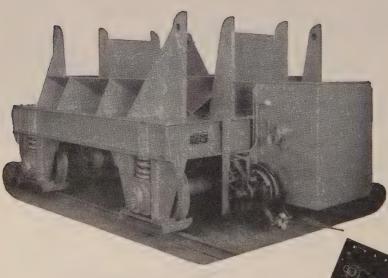
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## LETTERS

TO THE EDITORS

#### Continued Quality in STEEL

Again I write to ask for extra copies of articles which I have read in Steel. It seems that in almost every issue there are articles on timely subjects which we feel should be given to more than one person in our company for reference.

We would like two copies of your editorial, "Fight on Recession" (Page 55) and the article, "Let's Leap to Recovery with Bold Action on Depreciation" (Page 56), in your Apr. 28 issue.

Harold E. Hollberg

Assistant Plant Manager Magnus Chemical Co. Inc. Garwood, N. J.

#### **Progressive Thinking**

If you can spare four copies of the article, "Preview of Space Age Metals" (May 5, Page 86), I would appreciate them. This presentation shows the progressive thinking which we have come to consider typical of Steel.

F. R. Norton

Metallurgical Engineer Perry Kilsby Inc. Los Angeles

#### Seeks Escape from Fringes



Kindly forward three copies of your thought-inspiring article, "Check Your Fringe Costs" (May 5, Page 62).

B. J. Abendschein Chisholm-Ryder Co. of Pennsylvania Hanover, Pa.

#### **World Steelmaking Comparison**

You published an excellent article in your Progress in Steelmaking series, "Balance of Steel Power Shifts" (May 5, Page 92). May we please have a copy?

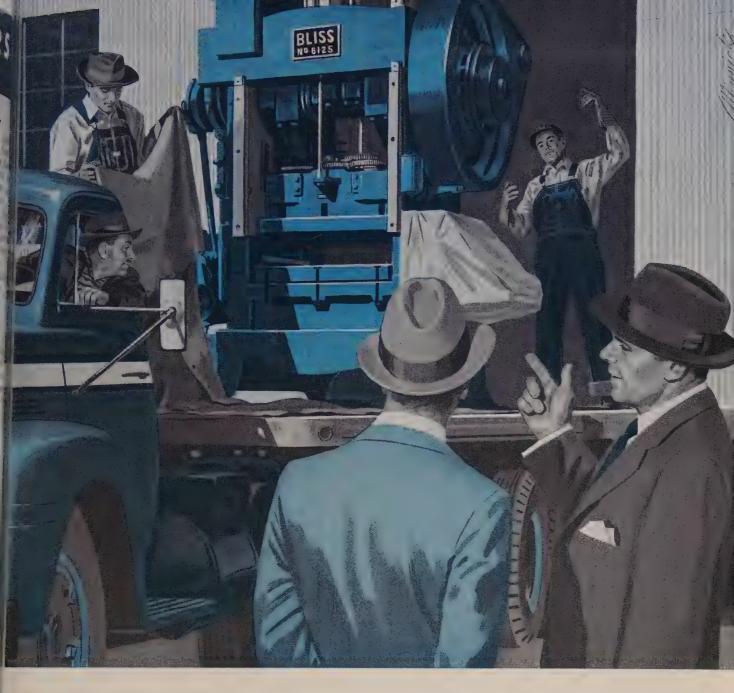
T. H. Bloodworth

Chief Systems Engineer Electrical Application Dept. Industrial Equipment Div. Allis-Chalmers Mfg. Co. Milwaukee

#### Reading Tailored to Job

Magazine fare, as you know, is tailored to one's job. It was with distinct pleasure that I read the Program for Management article, "Managing Defensework for Profit" (Apr. 14, Page 125). I still have and quite frequently use the management series of 1953 and 1954 for many prac-

(Please turn to Page 12)



## "The Board balked at first...

#### but I convinced them that now was a good time to buy!"

When machine tool builders work with smaller backlogs they're naturally more efficient and can make better deliveries... are more able to control costs ... more able to render the many *extra* custom engineering services that disrupt regular production during peak schedules. As a matter of fact, many progressive buyers are at their busiest now...taking advantage of the sound buying position the economy gives them as it pauses for its breath...seizing the opportunity to get ready for tomorrow today.



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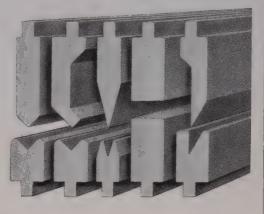
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Stock dies are used for a surprisingly large variety of bending operations. And, with CHICAGO induction hardened dies you get bonus performance and increased die life at no extra cost. Remember, these dies can be used in any make or size of standard press brake.

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Hand and Power Bending Brakes Special Metal-Forming Machines

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7458 South Loomis Boulevard Chicago 36, Illinois

### LETTERS

(Concluded from Page 10)

tical applications. I have found them well written, completely understandable, and invaluable. I would appreciate being brought up to date for the years 1955, 1956, 1957, and the articles published to date this year.

Barry D. Diamond

Manager, Production Planning Dept. Production Div. Radiation Inc. Melbourne, Fla.

#### **Tool Guide: Wonderful Service**

You have done a wonderful service for your readers by publishing "A Guide to Tool Steels & Carbides" (Apr. 21). This is an item that we have been wanting for a considerable time and one which will be of great assistance to us. We would appreciate six copies.

L. F. Loehr

Manager, Purchases & Stores Security Engineering Div. Dresser Operations Inc. Dallas

#### Magazine Disappears

A few months ago, there was an excellent article in STEEL discussing the number of sales representatives a manufacturer should employ. I wanted to circulate this article but, unfortunately, the magazine disappeared. Would it be possible to obtain three tearsheets?

F. S. Merchant

Standards Engineer Dexter Co. Division of Miehle-Goss-Dexter Inc. Pearl River, N. Y.

• We are forwarding three copies of "Have Enough Salesmen?" from our Dec. 30, 1957, issue.

#### **Metal Selector in Demand**

We would like to obtain two copies of your "Metal Selector" (Oct. 28, 1957, insert). Although we did not take advantage of it at that time, we have since seen copies of the Metal Selector and feel it would be useful to us.

H. W. Hale Jr.

Purchasing Agent Technicraft Laboratories Inc. Thomaston, Conn.

#### More on High Speed Milling

I was interested to read your article, These Tomorrow's Machining Speeds?" (Apr. 14, Page 138) and would appreciate three copies. I seem to recall certain experimental work done by Bell Aircraft during World War II of a similar nature. Do you have any record of these experiments which were run in aluminum? The Bell tests utilized a high speed disc similar to that shown in your illustration.

K. J. Boedecker Jr.

Reynolds Metals Co. Richmond, Va.

• We are forwarding a tearsheet, "High-Speed Milling" (STEEL, Oct. 25, 1943, p. 76), which describes the Bell tests.



# Hot-Metal Cars—built to last by a company that uses them



WELDING THE HOT-METAL CAR. Car is fabricated from rolled steel. It is all-welded and subsequently stress-relieved for extra-heavy duty.

**Hot-metal cars** are subjected to high temperatures and heavy loads as they carry their huge ladles of molten iron from the blast furnace to the mixer. But United States Steel designs and builds these cars to give satisfactory service for many years. It's only natural, because we use these cars daily in our own steelmaking operations, and we actually *know* what kinds of hot-metal cars serve best.

Shown above is a 55-ton capacity hot-metal car with a drop frame and rugged trunnion stands for supporting a ladle of molten iron. The car itself is fabricated from all-welded rolled steel, properly stress-relieved. Its side frames are six-inch rolled-steel plate, and the trunnion stands are eight-inch plate.

This car is equipped with air brakes for use in trains; it also has power hand brakes. Other variations are available in hot-metal cars. For example, cars can be designed to carry two pots, and they can be built with air-operated tilting mechanisms.

For information on many types of industrial cars, send for a free copy of our 32-page illustrated booklet—"USS Custom Designed Cars." And remember, you can call our engineers for consultation at any time convenient to you.

United States Steel Corporation – Pittsburgh Columbia-Geneva Steel – San Francisco Tennessee Coal & Iron – Fairfield, Alabama United States Steel Export Company





esearch and development are constantly extending the range and speed of modern military aircraft and missiles, making higher and higher demands on countermeasures as well.

In designing counter-measure controls to the high degree of accuracy required for our air defense, engineers are specifying gears of greater and greater precision and gear trains whose combined errors are almost infinitesimal. In many plants, gears which meet these specifications are being turned out on standard Fellows equipment at a high rate of production.\*

To combine extreme accuracy with high production rates, look to the complete Precision Line of Fellows gear production equipment. Fellows Gear Shapers are available in a full range of capacities from 1/16" to 120" P. D. Write, wire, or phone any Fellows office.

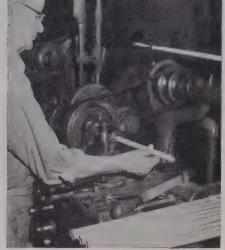


\*For example, Hughes Aircraft makes up to 15,000 fine pitch gears per month with toothto-tooth composite error as small as 0.0003"...on standard Fellows equipment.

THE FELLOWS GEAR SHAPER COMPANY 78 River Street, Springfield, Vermont Branch Offices:

- 1048 North Woodward Ave., Royal Oak, Mich. 150 West Pleasant Ave., Maywood, N. J. 5835 West North Avenue, Chicago 39 6214 West Manchester Ave., Los Angeles 45

THE **PRECISION** LINE Gear Production Equipment



Operator at Day-Brite plant is lathe-cutting fixture stems fabricated from Youngstown Cold-Rolled Sheets.

## Accent on excellence

### Youngstown hot and cold-rolled sheets



Students attending the new, modern Concord City School at Concord, North Carolina, will benefit by the latest developments in Day-Brite higher-intensity school lighting. All areas of the classroom will afford the greatest possible visual comfort—without any annoying reflected glare.

These beautiful, scientifically-designed fixtures, manufactured by Day-Brite Lighting, Inc., of St. Louis, Missouri, are fabricated from Youngstown Hot and Cold-Rolled Steel Sheets. Close quality-control by Youngstown guarantees Day-Brite a sheet of unwavering uniformity that makes possible long, trouble-free production runs—boosts profits, cuts over-all costs.

Wherever steel becomes a part of things *you* make, the high standards of Youngstown *quality*, the personal touch in Youngstown *service* will help you create products with an "accent on excellence".

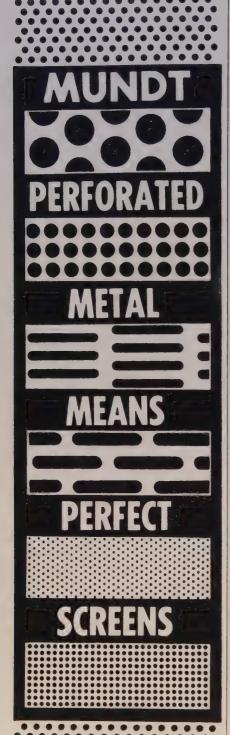


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SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel Youngstown, Ohio



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spur gears, spur pinions on Vibrating Screens and Ball Mills



### CHAIN BELT

hardened products on Pumpcrete Cylinders



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trunnion rollers on

Dryers

## Why do these equipment builders



#### WHELAND

gears and pinions on Slush Pumps



use hardened products?



## HALLDEN

gears, pinions, racks on Flying Shears

"Tool Steel Process" hardened products when used as components, virtually eliminate replacement problems. Fewer replacement expenses, maintenance savings, reductions in costly "downtime" mean greater customer satisfaction. That's why Allis-Chalmers Manufacturing Company, Chain Belt Company, General American Transportation Corporation, The Wheland Company and The Hallden Machine Company and many more use TSP hardened products to increase the over-all quality and life of their equipment. Here are a few reasons why TSP hardened products are so desirable. They are phenomenally long wearing, a result of our special hardening proc-

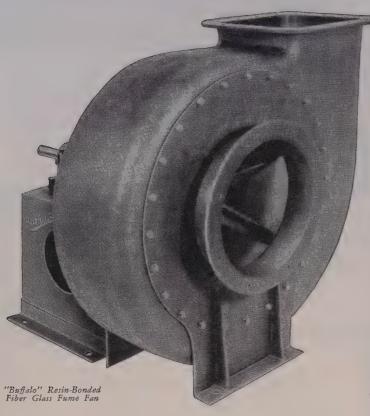
ess. The file hard surface to the full depth of permissible wear gives maximum life. The core, refined for toughness and ductility, gives maximum strength. Note even depth of hardness of gear tooth cross section.

TSP hardened products are made to order from your blue prints or to fit existing equipment. They include gears, pinions, track wheels, sheave wheels, axles, rolls, bushings, liners, sprockets, screw down screws and nuts, shafts, drive clutches, trunnions, hoist drums and many others. Gears are made in sizes to 90" diameter. Other products up to 22,500 lbs. They are guaranteed in writing to outlast, out-perform any competitive part in the same service.

Write for free Bulletin 352, "Why Are They Called TSP Products"



The Standard of Quality Since 1909 for Gears . Pinions . Rolls . Wheels and Other Hardened Products



"Buffalo" Type "FG" Fume Fans provide superior chemical resistance to a wide variety of corrosives, including acids, salts, gases, organic

materials. Temperature applications range up to 225°F.

The fan housing is formed of resin-bonded fiber glass. All exposed areas of the carefully-balanced steel rotor are encased in thick fiber glass. The "FG" is available in standard capacities up to 34,000 cfm at pressures to 10" static.

For full details, including chemical resistance table, write for Bulletin FI-511.

"Buffalo" Cast Iron Exhausters, widely-used throughout the chemical process industries, are engineered to operate under the most extreme corrosive conditions.

Husky cast iron housings, plus cast inlet cones with integral inlet vanes, guide air smoothly into the wheels. The result is the low-turbulence air flow inherent in this high-efficiency design. Non-over-loading is insured, regardless of system pressure.

Three arrangements are available: direct motor drive, separate belt drive or a package unit with adjustable pitch V-belt drive and motor mounted on adjustable base rails.

For full information on "Buffalo" Cast Iron Exhausters, contact your nearest "Buffalo" Representative or write us direct.

"Buffalo" Gas Absorbers are designed for highly efficient removal and/or recovery of soluble gases, vapors and mists from exhaust systems before discharge to the atmosphere. Absorption is accomplished when the contaminant is completely in solution. This is accomplished by means of an absorbent liquid sprayed on a series of fiber cells.

Field performance tests prove that efficiency of "Buffalo" Gas Absorbers ranges up to 99.8%. Applications fall into two categories: removal of low concentrations from stack gas effluents for prevention of atmospheric pollution, and the absorption of process or off-gases containing sufficient material to make reutilization economically feasible.

Bulletins AP-225 and AP-2500 will guide you to the proper "Buffalo" Gas Absorber to solve your contamination problem. Write for it today.

EVERY "BUFFALO" PRODUCT FEATURES THE "Q" FACTOR—the built-in Quality which provides trouble-free satisfaction and long life.



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#### BUFFALO FORGE COMPANY

BUFFALO, N. Y.

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FORCED DRAFT .

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• PRESSURE BLOWING

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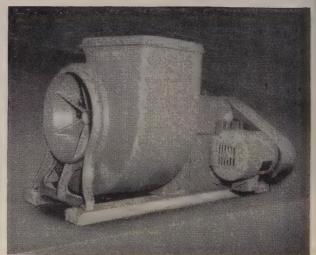
## CORROSION-CONTROL PROBLEMS?

# SOLVE THEM WITH THESE SPECIAL "BUFFALO" UNITS

The broad line of "Buffalo" equipment for corrosion control, plus our 80 years of engineering experience in this field, insures you of the most effective solution of your corrosive fume problems.

Whatever your specific needs, you will find the *right* "Buffalo" product with the *right* protective coating and/or corrosion-resistant parts to fill that need.

Contact your nearby "Buffalo" Engineering Representative, or write us outlining your problem. We will be glad to provide you with a prompt, practical, economical solution.





Top
"Buffalo" Cast Iron Exhauster

Bottom
"Buffalo" Gas Absorber



In carrier landings, planes coming in at more than 100 knots are stopped in a split second. This amazing performance is made possible by having each plane hook onto one of several wire ropes stretched across the flight deck. Both plane and rope receive an almost unbelievable shock at the moment of contact. Needless to say, only top-quality wire ropes can be used for this application because . . .

## you can't bargain with safety



LOOK FOR THE YELLOW TRIANGLE While your use of wire rope differs from this carrier application, safety should be just as important to you. For, although a "bargain" rope may save you money, it can cost you your peace of mind. So don't bargain with safety. Buy a rope that's a quality rope—buy Wickwire Rope.

5049

PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION

THE COLORADO FUEL AND IRON CORPORATION—Denver \* Houston \* Odessa (Tex.) \* Phoenix \* Salt Lake City \* Tulsa PACIFIC COAST DIVISION—Los Angeles \* Oakland \* Portland \* San Francisco \* Seattle \* Spokane WICKWIRE SPENCER STEEL DIVISION—Boston \* Buffalo \* Chattanooga \* Chicago \* Detroit \* Emlenton (Pa.) \* New Orleans New York \* Philadelphia

## New Materials Handling Ideas from Republic

# SPECIAL STEEL PALLETS HELP JOHN DEERE CUT ENGINE LOADING TIME 80%, UNLOADING TIME 86%



PRECISION MADE, REPUBLIC STEEL "BOLT DOWN" PALLETS have helped solve a tough, expensive, interplant shipping and handling problem at John Deere, because they were engineered to the

requirements of the job.

Four combine engines are bolted on to each pallet at Deere's Dubuque, Iowa, tractor plant, then trucked to the Harvester Works at East Moline, Illinois. There, the engine-loaded pallets are picked up by fork trucks and moved quickly and easily to the production line or to temporary storage.

Use of Republic Steel Pallets eliminates the need for truck dunnage for shoring up each individual engine. This feature alone results in a time saving of 80% in loading operations and 86% in unloading.

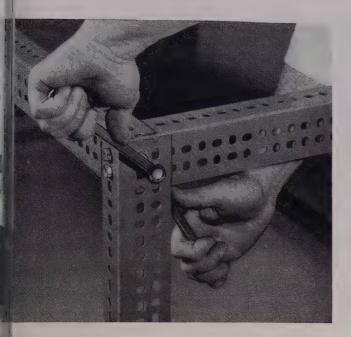
The pallets, designed and made by materials

tiered three high. Four-way entry permits pallets to be picked up from any side, provides ease of handling in tight quarters.

handling specialists at Republic's Berger Division, measure 43'' wide and 64'' long. Each pallet is equipped with 16 threaded holes for bolting down the engines. Spacing of these holes is such a critical part of the pallet design that they must meet a tolerance requirement of  $\frac{1}{2}$  of an inch.

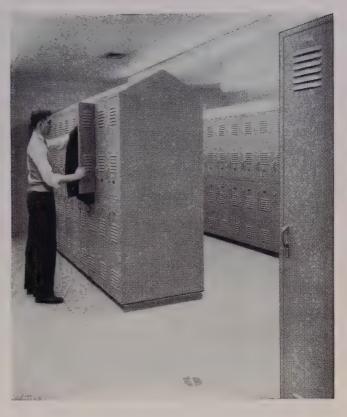
Tough, strong steel and corrugated construction combine to take the heavy engine loads in stride. Steel pallets were selected for this application by Deere, because they would require minimum maintenance and would be usable over many years.

Why not talk over your handling or storage problem with a Republic Engineer. A specially designed or standard pallet, box or skid could help you save time, cut costs, simplify an operation. Contact your Republic Materials Handling Representative. Or mail the coupon. There is no obligation.



NEW IDEA FROM REPUBLIC for making special purpose tables, stands, catlic walks, racks, scaffolds. It's BILD-A-FLEX, Republic Berger Division's slotted
construction angle. Use it as "metal lumber". Simply plan your assembly,
cut BILD-A-FLEX, join with bolts. Horizontal and vertical slots make adjustment easy. Bonderized and finished with gray baked enamel after fabrication. Shipped in convenient bundles of 10 angles, 10- or 12-foot lengths.
Stores in same space as one 2" x 4" piece of lumber. Write for new idealoaded catalog.





PRACTICAL IDEA for storage needs of plant personnel—Republic Steel Lockers. Indispensable wherever clothing must be changed or stored. Safe, pilfer-proof, tamper-proof. Available in a wide choice of styles and locking mechanisms. Bonderized for lasting paint adherence and resistance to damage. Republic's Berger Division will help you plan your new or enlarged locker system and handle all details. Write for facts.

SAVE TIME with Republic Sectional Bar Racks. Load or unload from either end or either side. Each upright supports 40,000 pounds of bar stock, shafting, pipe, when loaded both sides. Handles short or long stock with equal ease and convenience. Made by Berger to any desired length in multiples of 35- or 70-inch units. Uprights are 96 inches high, with 11-inch brackets adjustable at six-inch intervals. Send coupon for details

# REPUBLIC STEEL CORPORDED. ST -5890 1441 REPUBLIC BUILDING • CI

World's Widest Range of Standard Steels and Steel Products

#### 



To help you get every advantage from carbide cutting tools—high production, operating efficiency and economy—Carmet offers a full line of improved-design tool holders—over 115 styles and sizes to choose from in both positive and negative rake.

And Carmet Indexable inserts are available in more than 20 styles and sizes and in six different carbide grades—each insert permanently marked for positive grade identification—to give you top cutting performance.

Carmet tool holders and Indexable inserts make machining with carbides practical for any size plant. Match a Carmet tool to your

requirements—or let Carmet give you engineering assistance in setting up a complete tooling program—and watch your production climb as costs go down. Inquire today.

• Allegheny Ludlum Steel Corporation, Carmet Division, Detroit 20, Mich.

Write for this NEW CATALOG

CARMET TOOL HOLDERS

#### and INDEXABLE INSERTS

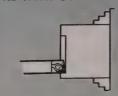


Expanded to 16 pages, this latest edition contains specifications of Carmet tool holders and Indexable inserts, replacement parts for tool holders, and information on choosing the proper carbide grade for the job.

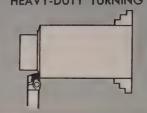
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MATCH THE TOOL
TO THE JOB

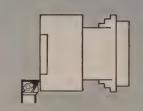
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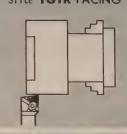
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STYLE TGTR FACING



STYLE SFTR
FACING





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For all your **CARBIDE** needs, call

## **ALLEGHENY LUDLUM**

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## CALENDAR

OF MEETINGS

June 1-4, American Gear Manufacturers Association: Annual meeting, Homestead, Hot Springs, Va. Association's address: 1 Thomas Circle, Washington 5, D. C. Executive secretary: J. C. Sears.

June 1-5, National Association of Power Engineers: Annual meeting, Ambassador Hotel, Atlantic City, N. J. Association's address: 176 W. Adams St., Chicago 3, Ill. Secretary: Edward J. Schuetz.

June 2-4, National Fluid Power Associaation: Annual meeting, Bedford Springs Hotel, Bedford, Pa. Association's address: 1618 Orrington Ave., Evanston, Ill. Executive secretary: Barrett Rogers.

June 2-5, American Nuclear Society: Annual meeting, Hotel Statler Hilton, Los Angeles. Society's address: P. O. Box 963, Oak Ridge, Tenn. Executive secretary: W. W. Grigorieff.

June 2-5, National District Heating Association: Annual meeting and exhibit, French Lick Sheraton Hotel, French Lick Springs, Ind. Association's address: 827 N. Euclid Ave., Pittsburgh 6, Pa. Secretary-treasurer: John F. Collins Jr.

June 3-6, National Industrial Advertisers Association: Annual conference, Chase-Park Plaza Hotel, St. Louis. Association's address: 271 Madison Ave., New York 16, N. Y. President: John C. Freeman.

June 4-5, Pressed Metal Institute: Personnel management meeting, Carter Hotel, Cleveland. Institute's address: 3673 Lee Rd., Cleveland 20, Ohio. Managing director: Harold Daschner.

June 5-7, Steel Kitchen Cabinet Manufacturers Association: Annual meeting, Greenbrier, White Sulphur Springs, W. Va. Association's address: 812 Engineers Bldg., Cleveland 14, Ohio. Executive secretary: Arthur J. Tuscany Jr.

June 8-13, Society of Automotive Engineers: Summer meeting, Chalfonte-Haddon Hall, Atlantic City, N. J. Society's address: 485 Lexington Ave., New York 17, N. Y. Secretary: John A. C. Warner.

June 9-10, Malleable Founders' Society: Annual meeting, Homestead, Hot Springs, Va. Society's address: 1800 Union Commerce Bldg., Cleveland 14, Ohio. Executive vice president: Lowell

June 9-11. American Management Association: Special manufacturing conference, Hotel Carter, Cleveland. Association's address: 1515 Broadway, New York 36, N. Y. President: Lawrence A. Appley.

## "POP"® RIVETS

## can probably save you money...

Even if your present fasteners are free!



Same length "POP" Rivet holds tight through thick or thin.



**Vibration Proof** "POP" Rivets cannot back out or become loose. No lock washers or nuts required.



Low Head Profile

Where space is important, "POP" Rivets' minimum head height is the answer.



**Less Critical Hole Diameter** Designer wants holes tight, production wants holes larger. "POP" Rivets make both happy.



Least Back-Up Space Strong, high grip "POP" Rivets need only enough back-up space to provide room for set

When buying fasteners, do you figure the installed costs? A fastener considered alone may cost very little but be very expensive by the time it's installed and becomes part of a finished product.

"POP" Rivets afford greater flexibility in product design. Often operations can be eliminated, assembly costs reduced, and speed of fastening increased.

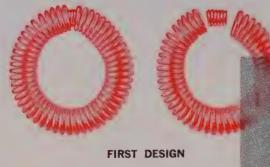
Many users find high strength "POP" Rivets the most efficient and economical fastener for their product. Investigate its use in your application. Perhaps you too can enjoy the many advantages "POP" Rivets have to offer. Write us today.

## "POP" RIVET

DIVISION

UNITED SHOE MACHINERY CORPORATION West Medway, Mass.

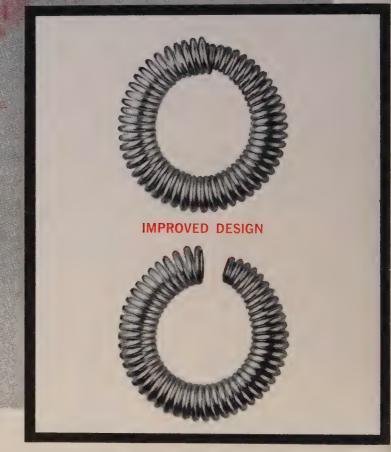
## How a change in spring design can reduce cost and improve performance.



In the original conception of this switch retaining spring, an extension spring was formed into a garter spring by inserting a small plug in the form of a spring into the two ends. Assembly operation proved difficult and costly.

In the redesigned spring, one end is reduced in diameter and inserted into other end, eliminating the spring plug and providing stronger unit.

Early consultation with our spring specialists, following the determination of fundamental performance characteristics, is often insurance against unnecessarily complicated manufacture. Write for pamphlet "How to solve your spring problems." Gives case histories and valuable design considerations for various types of springs.



## **Associated Spring Corporation**

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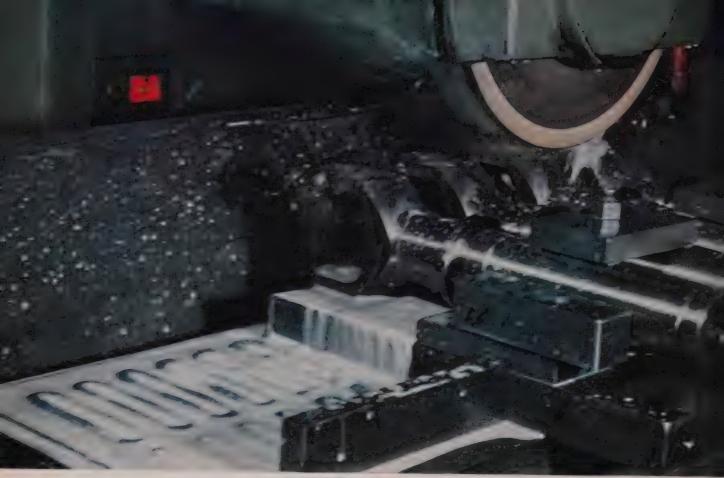


ROTARY SLITTING LINES

May 26, 1958

ANUFACTURI

400



Wheels and machines stay cleaner with emulsions of new S.E.C.O. Also, finishes are better.



Emulsions of new S.E.C.O. allow faster cuts with less tool wear.

Photos courtesu of Peter Salmon Co., Glensi iv. Pa

## NEW EMULSIFYING OIL KEEPS MACHINES CLEAN, PROTECTS AGAINST RUST, GIVES IMPROVED HARD-WATER EMULSION STABILITY

Emulsions of Sun's new S.E.C.O. (Sunoco® Emulsifying Cutting Oil) with smaller oil particle size give you the following benefits-

EMULSION STABILITY-In hard-water areas, impartial field tests show that emulsions of new S.E.C.O. stand up better under more severe conditions than those made with other regular emulsifying cutting oils.

**DETERGENCY**—The excellent wetting properties and detergency of new S.E.C.O. allow dirt and fines to settle quickly out of emulsions. Grinding wheels and machines stay cleaner.

RUST-PREVENTION—The smaller oil particle size in emulsions of new S.E.C.O. gives better metal wetting properties and increased protection against rust and corrosion. See photos below.

If you're a regular user of S.E.C.O., notice how much it has been improved. If you're not, find out what we mean about greater economy and improved production with new Sunoco Emulsifying Cutting Oil. Call your Sun representative, or write to Sun Oil Company, Philadelphia 3, Pa., Dept. I-9.





800x photomicrographs of 10% emulsions. New S.E.C.O. emulsion on left contains 8 times as many oil particles per unit volume as ordinary emulsion on right. Many minute particles in S.E.C.O. emulsion do not show at this magnification.

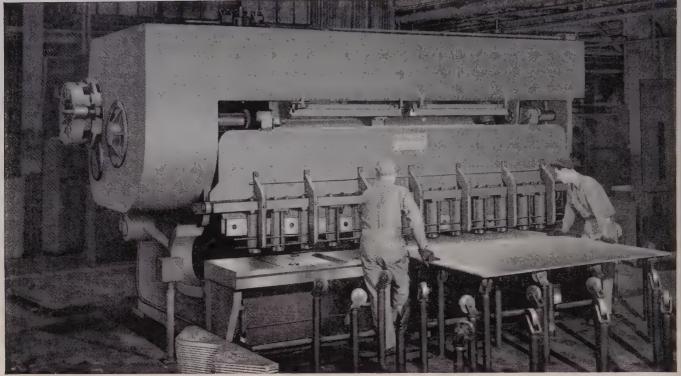


INDUSTRIAL PRODUCTS DEPARTMENT

SUN OIL COMPANY Philadelphia 3, Pa.



# Better Cuts Make Better Fits for Road Machinery Builder



This rugged machine is in service two shifts — 16 hours a day — five days a week shearing parts of various thick-

nesses and shapes for heavy earth-moving equipment. It is rated for mild steel 12' x 1".

THE ease with which good, square, accurate cuts are obtained has made the Steelweld Shear of a road machinery manufacturer very popular with the operators and shop management.

Experienced with various type shears, they know the importance of easy knife clearance adjustment. They know that the best cuts are obtained when the correct clearance is provided for each thickness of plate being cut. As they point out, improper knife clearance on any shear often results in a heavy plate being cut at an angle with respect to the thickness, or light gauge metal burring.

Adjusting knife clearance on Steelweld Shears

is such an easy, quickly-performed task that operators take care of it automatically. Turning a hand crank until a gauge pointer is on the proper metal-thickness figure is all that is necessary — a task done in a matter of seconds.

The big time saving made on knife changing as compared with most shears is another factor greatly appreciated. Easily done in two hours on a Steelweld, this job frequently requires all day on other machines.

Steelweld's unusual pivoted-blade operating principle makes possible outstanding cost-cutting advantages. For the complete story, send for the catalog below.



CATALOG No. 2011 gives construction and engineering details. Profusely illustrated. THE CLEVELAND CRANE & ENGINEERING CO.

STEELWELD DIVISION • 7840 E. 282 ST. • WICKLIFFE, OHIO

STEELWELD PINOTED SHEARS



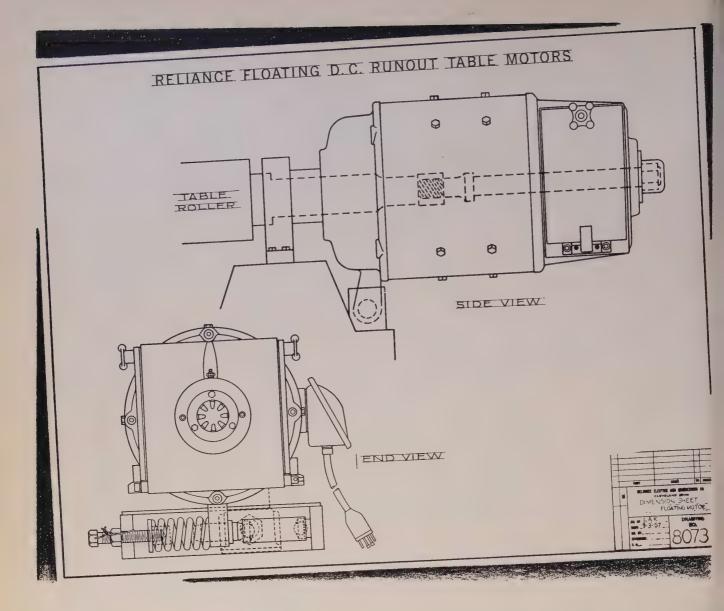
## There is no substitute for Stainless steel

in outer space

From the intense cold of outer space to the heat of a jet engine, Stainless Steel is the one metal that will stand up. In rockets, missiles and supersonic aircraft, Stainless Steel resists heat, friction and corrosion, has a high strength to weight ratio and maintains its structural integrity under the most severe conditions.

Specify McLouth high quality sheet and strip Stainless Steel. McLouth Steel Corporation, Detroit 17, Michigan.

## Mc Louth Stainless Steel



## Reliance runout table motors cut installation and maintenance costs

Reliance Hollow Shaft, floating motors are easy to install. They require no special pedestals or flexible couplings.

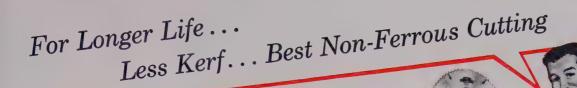
The hollow shaft motors fit right over the table-roller shaft. No special alignment is required. Warpage and backlash compensation are handled by the heavy tie-down spring. Not only are coupling maintenance and lubrication eliminated, but a much greater degree of roller misalignment can be tolerated.

Reliance Floating motors are designed and built specifically for runout table service. They are available with a wide range of speeds and out-put torques. For complete information contact your local Reliance Representative, or write for Bulletin No. F-2051.



## RELIANCE ELECTRIC AND ENGINEERING CO.

DEPT. 45A, CLEVELAND 17, OHIO CANADIAN DIVISION: TORONTO, ONTARIO Sales Offices and Distributors in principal cities



## SIMONDS HARD RIM SAW

This Simonds solid saw (new to the market) has already made a solid hit! The men who have to get the work out are sold on the Simonds "Hard Rim's" longer cutting life between sharpenings . . . the better finish it imparts to the non-ferrous metals and plastics it cuts so smoothly . . . the minimum kerf as against non-solid saw cutting. Yes and everyone likes the Simonds "Hard Rim" because of its non-shattering safety when run at high speeds and the protective advantages to personnel.

This very true cutting saw is available in diameters of 8" to 18". Try it out — call your Simonds Distributor!

For Fast Service from Complete Stocks Call your

SIMONDS Industrial Supply DISTRIBUTOR



Factory Branches in Boston, Chicago, Shreveport, La., San Francisco and Portland, Oregon Canadian Factory in Montreal, Que., Simonds Divisions: Simonds Steel Mill, Lockport, N. Y. Heller Tool Co., Newcomerstown, Ohio, Simonds Abrasive Co., Phila., Pa., and Arvida, Que., Canada



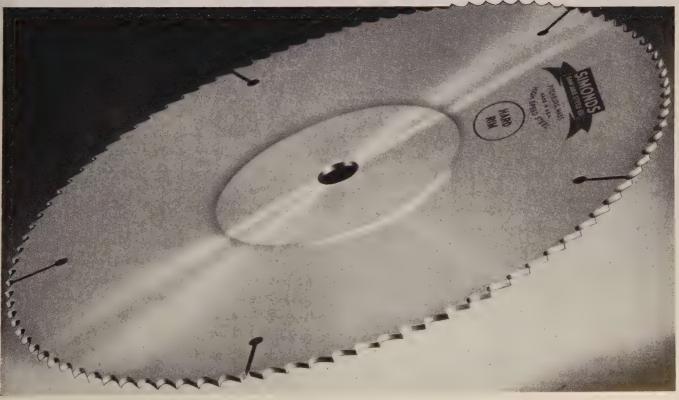
#### QUICK FACTS

Saw Rim — Made very hard for unparalleled resistance to abrasion and wear

Saw Body — Made just hard enough to keep the saw cutting straight

Resharpening — Easily done on standard saw grinding equipment





# Weldynamics



ARC WELDING AT WORK CUTTING COSTS



## Weldynamics saves 38% on Brown & Sharpe grinder base

A more rigid, better looking machine at 38% less cost—thanks to Weldynamics. In redesigning the former welded construction, details were simplified to use preformed parts. Welds are now more accessible and made faster. Parts can

be machined before assembly, reducing storage and handling costs.

♠ Original design in welded steel had to be assembled before machining causing increased handling and storage costs.

New design of welded steel weighs less, costs less and looks better. Components are simple and machining is completed before assembly. All welds are easily made and finishing costs held to minimum.



## How to put WELDYNAMICS to work for you

Direct consultation with Lincoln men, trained in Weldynamics, to help you with procedures, and to recommend the proper machines and electrodes—Product Design Seminars conducted to help you design correctly in welded steel—Design Bulletins, sent free to design engineers and production supervisors, offer design ideas—Procedure Handbook, contains over 1300 pages, 240 devoted to machine design practices. \$3.00 postpaid in U.S.A., \$3.50 elsewhere. Write us.

The World's Largest Manufacturer of Arc Welding Equipment

LAINCOLN

© 1958 The Lincoln Electric Company

THE LINCOLN ELECTRIC COMPANY, DEPT. 1640, CLEVELAND 17, OHIO



Today's industries need Gerlinger Continuous Operation

## How would it get there without this Gerlinger?

erlinger Fingertip Control makes is powerful lift truck simple and isy to operate. Motive, hoist and t levers are located within reach operator's right hand.

erlinger Torqmatic Drive safe-uards engine from damaging nocks, prevents stalling, eliminates earshiff guess and lessens drive stigue. Advanced Gerlinger Power teering is an optional extra.



erlinger Material Carriers up to O tons capacity handle the biggest bs you have. Straddling 1-beams, pe, slabs and huge pallet loads materials, they are extremely

Moving 10,000-pound mixers more than a hundred yards from production to storage posed a few cost and manpower problems for this metalworking plant. They were solved with a Gerlinger Model S-15 Fork Lift Truck rather than erect extensive conveying equipment.

Now one man speeds the mixers from factory to storage on Gerlinger standard forks.  $7\frac{1}{2}$ -ton lift capacity makes it a powerful mass-handler for all types of plants. Its

Leaders for 39 years in building Fork Lift Trucks, Tractors and Carriers



\*Gerlinger Carrier Co., Dallas, Oregon, is a subsidiary of Towmotor Corporation, Cleveland, Ohio

pivotal steering, counter-active weight distribution and positive fingertip controls make this unit—like all Gerlinger lift trucks -as easy to maneuver as your family car.

New data folders are available to show you many ways to benefit with Gerlinger equipment. Send coupon for the specs most widely used in the metalworking industry.

Send fro	ee Ge	rlinger	Fork	Lift	Truck
literatu	re wi	th spe	cs.		

☐ Send free Certified Job Studies relating to the metalworking industry.



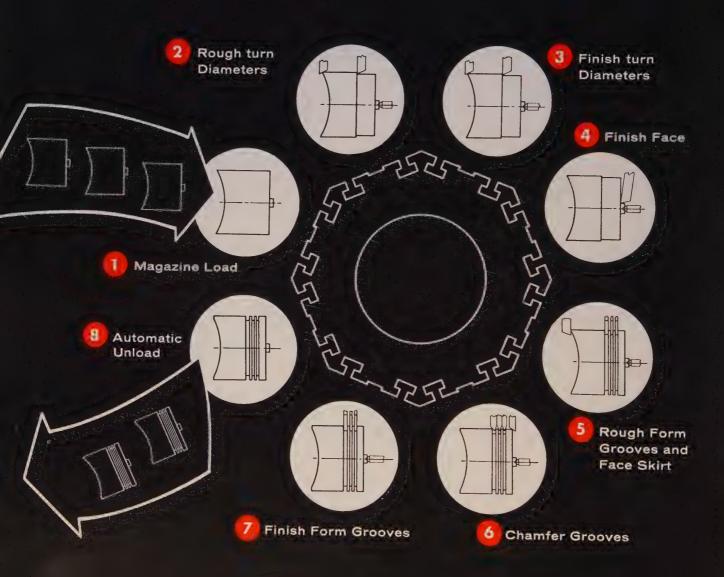
Name\_ Company\_

Mail to GERLINGER CARRIER CO., Dallas, Oregon

### here is

## circumferential automation

at work ...



Here's an example of Circumferential Automation integrated into an automated production line. Castings are conveyed to the magazine which loads the machine. After machining (16 operations in 8 seconds) is completed the piston is automatically unloaded—carried on to assembly.

Automatic Load—Unload Accessories INTEGRATE

# circumferential automation\*

#### and in-line automation

Each spindle of an Acme-Gridley Automatic is a work station where a number of machining operations can be performed. From the time the work piece is loaded into the spindle it is never let go; indexes from station to station where pre-sequenced operations are carried on without manual attention. Upon completion workpiece is released at the unloading position and is subsequently transferred to the line. Secondary operations are eliminated. This is automation . . . circumferential automation.

Acme-Gridley automatics equipped with magazine loading and unloading devices can easily be integrated into fully automated production and assembly lines. They provide maximum production flexibility and assure day-in, day-out operation with minimum human attention.

Let us show you how circumferential automation can go to work for you.—our representative will be glad to call without obligation.

# National Acme

THE NATIONAL ACME COMPANY, 189 E. 131ST ST., CLEVELAND 8, OHIO • Sales Offices: Newark 2, N. J., Chicago 6, Ill., Detroit 27, Mich.

All 'round the world where there's work to be done and time to be saved there's an Acme-Gridley to do it.

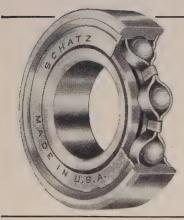
# Name your load and speed combinations

We'll fit these bearings—or special types and sizes to your special needs.

Just fill in your application problem below—attach to your letterhead and mail.

THE SCHATZ MANUFACTURING COMPANY, Poughkeepsie, N. Y. Here's our bearing problem. What do you suggest?	OPERATING CONDITIONS
APPLICATION	SPECIAL CONDITIONS
LOAD (radial, thrust or both)	NameTitle
SIZE	Company
SPEED	Address
LIFE FACTOR	CityState

# Schatz makes the most varied line of Ball Bearings to fit your needs



### "Functional Precision" Ball Bearings—BR series

One piece race type with ball cage. Designed to give all the precision you require under certain ratios of load, speed and life expectancy. Available in open type, single or double shielded, single or double sealed with Schatz patented low friction plastic seal. Or with one shield and one seal on special order.

23 sizes from  $\frac{3}{16}$  to  $\frac{1}{2}$  to  $\frac{1}{2}$  to types in each size + specials

"Commercial" Ball Bearings—The most complete and varied line anywhere.

UNGROUND BALL BEARINGS "TYPE A"—Every standard type—radial, thrust and radial thrust.

GROUND BALL BEARINGS "TYPE B"—Used and recommended where greater accuracy and smoother running qualities are needed and where loads are heavier and speeds higher.

1033 sizes to match your Bearing Application Needs



ds

THE SCHATZ MANUFACTURING COMPANY • Poughkeepsie, New York



# MINUTEMAN!

### Your steel service center starts delivery even as you place your order!

In every way, your local steel distributor is geared to keeping production lines rolling. He's ready to rush the amount, quality, size and shape of steel to meet almost any conceivable demand—on the double. He's your on-the-spot insurance against the plant shutdowns and lost contracts that can be caused by in-plant steel shortages.

On a regular basis, his facilities, stocks and fast delivery service can be integrated with your production needs. He is, truly, the service center of the steel industry. And he's only a phone call away.

Call him for any quantity of Weirkote continuous-process zinc-coated sheets, Weirzin electrolytic zinc-coated sheets, hot- or cold-rolled sheets or any type of steel you may need for any type of production job.

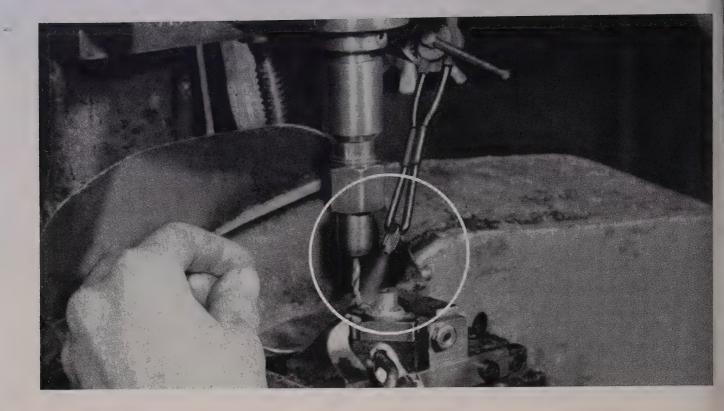


# WEIRTON STEEL

WEIRTON, WEST VIRGINIA

a division of





# \$40 Multi-Mister doubles tool life -holds closer tolerances!



Multi-Misters available with one or five gallon tanks, one to four nozzles. All models complete and ready for installation.



When overheated drill becomes oversized, "run-out" occurs and thin walls buckle. Mist-cooled drill cuts a perfect hole.

Cooled and lubricated by fine spray mist, tools cut better; last longer!

Heat—the principal cause of short life for forming and cutting tools—can now be effectively controlled on many of your toughest jobs with Multi-Mister—DeVilbiss' new mist-cooling development.

DeVilbiss' Multi-Mister directs a chilling blast of air and coolant to keep temperatures down two ways: (1) the jet of expanding air dissipates tool heat instantly, and (2) the mist lubricates cutting edges to reduce friction.

The results: longer tool life, finer surface finishes, closer dimensional tolerances, fewer shutdowns to sharpen and reset tools.

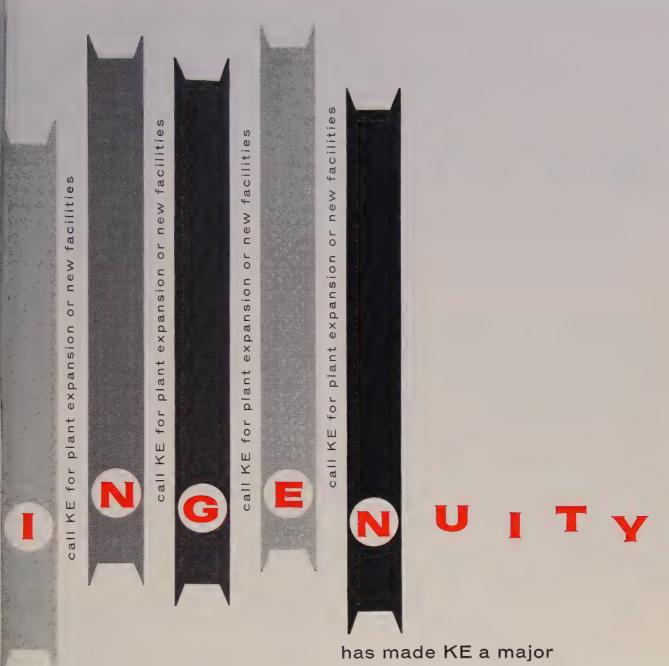
A call to your DeVilbiss representative will supply you with even further advantages of mist cooling, plus a free demonstration of Multi-Mister on your own machines! Call him today; or write us direct for Multi-Mister Bulletin BC 1025.

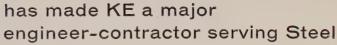
THE DEVILBISS COMPANY

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Barrie, Ontario • London, England Branch Offices in Principal Cities



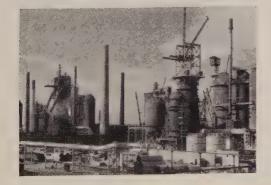




At India's mammoth Tata works, at Jones & Laughlin, at Kaiser Steel-Kaiser Engineers' ingenuity advances the art of making steel.

KE can take your development thoughts from a gleam in your eye through start-up. KE performs any part-economic analysis, plant location, engineering, design, procurement, expediting, construction. One contract can cover all.

> For your next plant or expansion, take advantage of KE's cost-saving ingenuity and wide experience in Steel.



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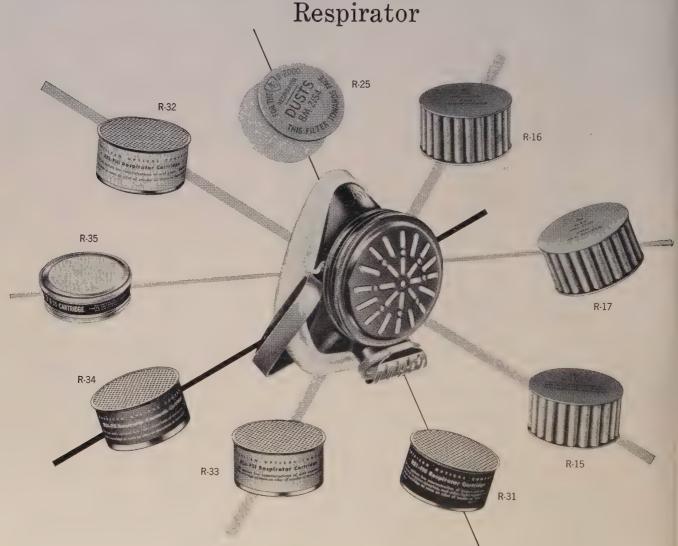
KAISER

4364

# 8 in 1 Now...9 in 1!



Inventory Saving, Cost Saving AO R-2000 Series



Yes, with the addition of the NEW R-35\* Cartridge (and other cartridges and filters), the AO R-2000 can be quickly converted to one of nine respirators for protection against a multitude of dust, gas and vapor hazards — singly or in combination.

AO Sweatbands keep workers cool, comfortable, efficient, prevent accidents. Check your stocks.



\*Recommended for exposures to low concentrations of All Dusts not significantly more toxic than lead and Organic Vapors simultaneously.

Your nearest American Optical Safety Products Representative can supply you. Always insist on to trademarked safety products.

SOUTHBRIDGE, MASSACHUSETTS Branches in Principal Cities



Stamco Slitting and Coiling Lines will step up your production because they are designed to meet your particular specifications. Years of experience have led to the development of equipment that will meet every slitting and coiling requirement. Stamco slitting and coiling lines are now efficiently handling coils from 500 to 60,000 pounds and are designed to give dependable, maintenance-free service.

Write us, stating your requirements . . . we'll gladly give complete details—no obligation.

View shows coil and traverse, coil pay off reel, coil loading ramp and detachable slitter head.



Overall view of coiling line from entrance end.



STAMCO, Inc., New Bremen, Ohio

## When you buy from Ohio Seamless



## OHIO SEAMLESS

### DOES THE REST

Buying steel tubing from Ohio Seamless doesn't cost—it pays. Our minimum quantities are generally smaller than you may realize... often as small as 100 to 150 feet, in certain seamless grades and sizes.

When you buy from us, you're dealing with tubing *experts*... men who can recommend the *exact* Ostuco Tubing to suit your product and processes. There's no compromise on analysis, size, anneal, etc.

Advantages of buying from Ohio Seamless multiply, the closer you examine them. Our single-source service eliminates headaches of interplant shipments . . . possible errors . . . multiple purchase orders and invoices. Ohio Seamless keeps your production lines humming because you get precisely what you want.

For proof, contact our nearest sales office or the plant at Shelby, Ohio-Birthplace of the Seamless Steel Tube Industry in America.



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CANADA: RAILWAY & POWER ENGR. CORP., LTD.

EXPORT: COPPERWELD STEEL INTERNATIONAL COMPANY
225 Broadway, New York 7, New York



## OHIO SEAMLESS TUBE DIVISION

of Copperweld Steel Company SHELBY, OHIO

Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging

Mr. R. J. Stuart, Jr., Vice President, Messinger Bearings, Inc. says: "Scott Wipers meet our needs very well. We use them for many different wiping jobs, such as the wiping of finished bearings before inspection, wiping grease and dirt from turret lathes, keeping the hand wheel of a 144" boring mill clean plus all general clean-up wiping.

People
buy
Scott Wipers
for
many
reasons:

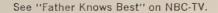


# Messinger Bearings likes the safety and sanitation of Scott Wipers!

Messinger Bearings, Inc., Philadelphia makes precision bearings for the steel and machinery manufacturing industries, bearings for radar units, shipboard gun turrets, air force and army equipment. They've used Scott Wipers for the past two years. Mr. R. J. Stuart, Jr., Vice President, says: "There's a danger of metal chips in cloth wipers—chips that might cut an employee's skin, cause infection. We introduced Scott Wipers to eliminate this hazard, and to keep our men happy." Soft, absorbent two-ply paper Scott Wipers are always fresh from a box. They're disposable after use. At Messinger, Scott Wipers have helped improve morale, plant housekeeping and inspection work because the *uniformity* of Scott Wipers increases wiping efficiency.

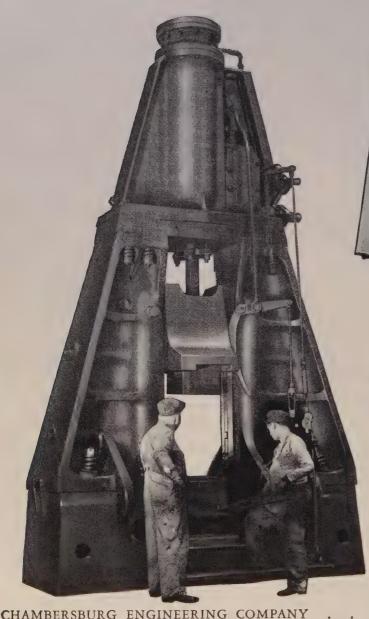
Your Scott distributor has the complete Messinger Bearings case history and many others, covering many fields. He's in the Yellow Pages under "Paper Towels." Or write: Scott Paper Company, Dept. S-85, Chester, Pennsylvania.





Do your Steam Hammers look like this?

TIME TO MODERNIZE



# CHAMBERSBURG STEAM DROP HAMMERS

have kept pace with modern forge shop requirements. With Chambersburg Steam Drop Hammers you get more forging per blow and more forgings per hour for higher production. And—at the same time you'll find production savings in lower power consumption, less downtime, better die alignment. Every feature of Chambersburg Hammers is designed to produce forgings at the lowest possible cost per piece.

Write for Bulletin

. CHAMBERSBURG, PA.

# CHAMBERSBURG











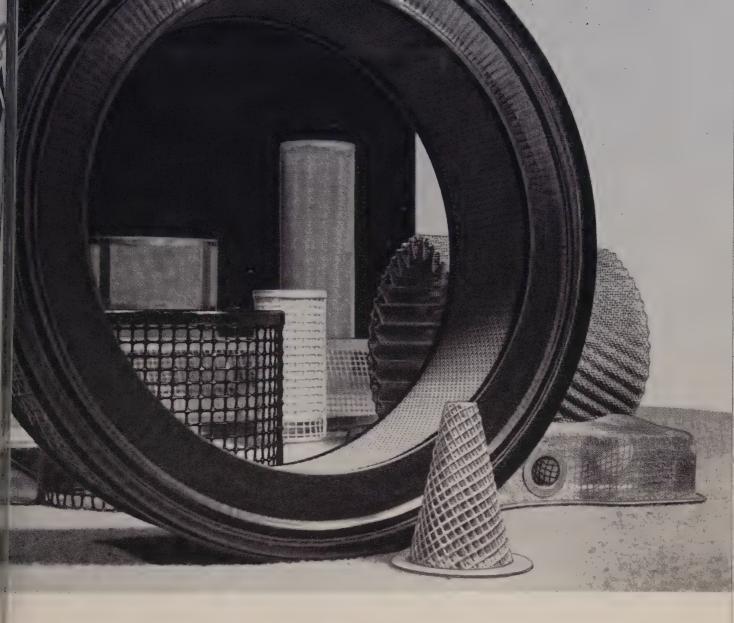








44



### How to **USE** wire cloth at lower cost

Today many companies are able to make wire cloth components, like these shown here, at lower cost than ever. The answer lies in new services, new developments worked out by the *Reynolds Wire Division* of National-Standard . . . ideas aimed at the more effective, less wasteful *use* of industrial wire cloth. For example . . .

#### 5 SUGGESTIONS:

- 1. Check on wire cloth rolls 2 to 8 times normal length . . . for 2 to 8 times as much production in a single run. Fewer shutdowns. Less handling.
- 2. Consider pre-slit widths, plain or with woven-in rein-

forcement, as narrow as 1 inch or less, to meet your requirements exactly with minimum handling and waste.

- 3. Evaluate Reynolds' new palletized packaging. Less chance of damage. Faster, easier handling on arrival, in and out of storage and right to production operations.
- 4. Look into the many different weaves, meshes, metals, finishes and coatings... some unique with Reynolds... to make sure of the optimum specification for your requirement.
- 5. By all means take advantage of Reynolds' engineering and analytical service... nation-wide and unmatched in the industry. Time and time again it contributes to a better finished product at lower cost.



# Here's a NEW WELDING TORCH that's WATERTIGHT...built for HEAVY-DUTY SERVICE

# ...yet weighs only 7 OUNCES!



The terms "Linde," "Heliare," and "Union Carbide" are registered trade-marks of Union Carbide Corporation,



Quality in Ascendancy

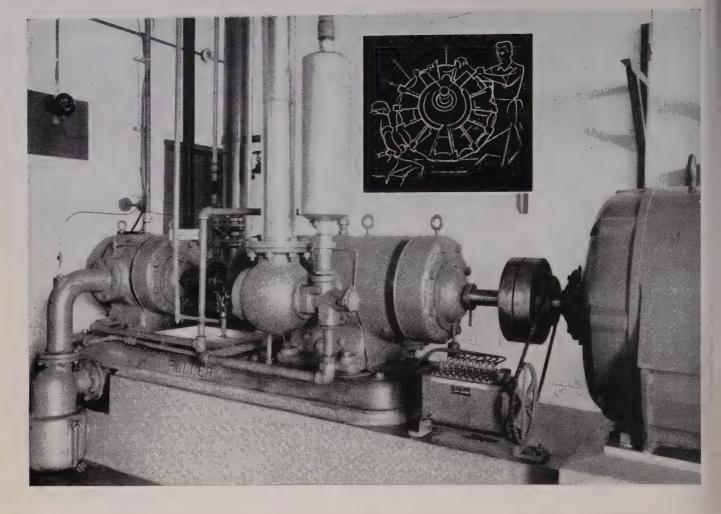
The superiority of the vast number of products that are-and can be made from Roebling Cold Rolled Flat Spring Steel is a fact known throughout all

You pay for mechanical and dimensional uniformity when you buy flat spring steel...you get it when you buy Roebling.

For information on how our products can help yours, write Wire and Cold Rolled Steel Products Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation

Roebling ... Your Product is Botton Com



### WHY DID AIRWORK SPECIFY A FULLER AIR COMPRESSOR?

Here's what the Vice President-Operations of Airwork Corporation, one of the nation's leading aircraft overhaul companies, writes about Fuller Model C-150-150H Rotary Air Compressors.

"We were running out of air capacity, and had decided that we would like to get rid of the maintenance problems inherent in a piston type air compressor.

"The Fuller compressor with its fewer moving parts and favorable price range met our basic requirements.

"We then checked on Fuller compressor performance through our close contacts with a leading manufacturer of aircraft engines. Their opinion was very favorable. We think Airwork has made the right decision."

#### Here are the features that sold Airwork on a Fuller Compressor:

- Wide seal between rotor and bottom of cylinder, assuring high volumetric efficiency.
- Rotary design assuring vibration-free flow of air.
- Direct drive.
- Compact space-saving installation.
- Simple foundation.
- No valves to leak or seats to grind.
- Few moving parts, keeping maintenance time to minimum.
- Designed for continuous duty service

When your plant needs reliable air power, call on Fuller. To get all the facts on Fuller Rotary Compressors for capacities up to 3300 C.F.M. and pressure to 125 pounds, write today,





# FULLER COMPANY 160 Bridge St., Catasauqua, Pa.

SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Birmingham • Chicago • Kansas City • Los Angeles • San Francisco • Seattle

PIONEERS OF HIGH-EFFICIENCY VANE TYPE ROTARY COMPRESSORS SINCE 1930





# KINGSBURY

One job is fairly simple, one complex, but both parts are produced at a high production rate with few rejects and little down time. Good basic design is the main reason. Each job had careful study so that the fixtures would hold the parts firmly and accurately and the tools operate as required.

KINGSBURY

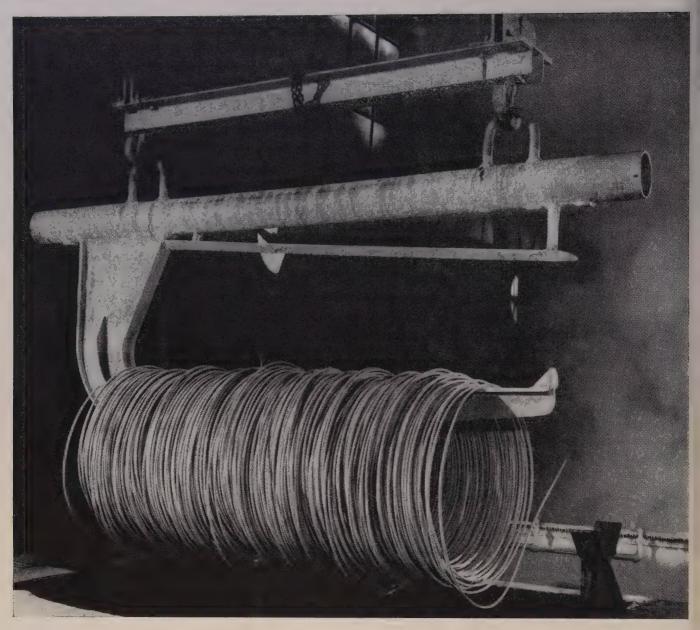
Before we shipped these machines, we ran sample

parts that gaged perfectly. When each customer received his machine it was ready to produce. Rugged construction will keep them producing month after month without trouble.

We've been building successful machines like these for 38 years. Ask us to quote one of your jobs. Kingsbury Machine Tool Corporation, Keene, N.H.



INDEXING AUTOMATICS for high production drilling and tapping



**Closeup** of a Monel pickling hook in the Wire Draw Department, the Timken Roller Bearing Co., Gambrinus

Plant, Canton, Ohio. Pickling is in sulphuric acid up to 16%, at 180°F. Loads vary from 1700 to 2700 pounds.

# 9 years of acid service... This Monel hook looks as good as new!

See this hook? For 9 years it's been dipping wire into sulphuric acid solution — no repairs, no letup.

When the Timken Company started up this pickling line in 1949, specifying engineers wanted pickling hooks made of a strong, acid resisting metal. They chose Monel\* nickel-copper alloy. It has excellent corrosion resistance — can't weaken

by dezincifying.

## This fabricated hook will last a lot longer, too

It's stronger than structural steel. If damaged, it's economically repaired.

Monel alloy saves replacements in other pickling equipment, too. In slings, baskets, chains, tie rods, Monel alloy's unique combination of corrosion resistance...strength...ductility...easy welding...really pays off.

You'll find a lot of useful information about Monel alloy pickling equipment in the illustrated handbook, "Equipping the Pickle House for Greater Production at Lower Cost." Write for it.

\*Registered trademark\*

THE INTERNATIONAL NICKEL COMPANY, INC. 67 Wall Street inco New York 5, N. Y.

# INCO NICKEL ALLOYS



Metalworking

May 26, 1958

# Outlook

### Chrysler Institutes Management Pay Cut

On top of closing various operating units and reducing personnel, Chrysler Corp. has moved to deduct one to three weeks' pay of officers and executives this summer to cut costs. About 2000 management men will be affected. Company officers will forfeit three weeks' pay—one in July, one in September, and one in November. Executives making \$15,000 and over will lose two weeks' pay—one in July, one in September. Those making between \$10,200 but less than \$15,000 will be cut one week—half in July and half in September. In announcing the deductions, Chrysler's administrative committee served up this sweet with the bitter: "There is a good and promising future for the auto industry and for Chrysler Corp. in particular, which far transcends this temporary dip in the business cycle."

#### Look for Auto Union To Meet Deadline

Key locals of the United Auto Workers have been notified not to strike even if present contracts are allowed to expire, but it still looks as if the union will sign when the deadline is reached. Some observers think the companies will demand a two-year contract if the final package is between 11 and 13 cents. However, the odds seem to favor a one-year pact. Rumors: The union will get more SUBenefits; skilled workers will get at least an extra penny in the wage differential; and retired workers will get a better deal.

### Steel Fabricators Face Wage Hike

Going on the theory that a recession is no time to take a backward step, the USW is expected to ask fabricator shops for a wage package totaling 15 to 16 cents this year. The union says it has 214,631 members under 1199 contracts in the U. S. and 75,000 members in Canada. Agreements in both countries expire this year. The aim of the plan, which is said to have the approval of the USW wage policy committee, is to match boosts workers in basic steel will get under escalator clauses on July 1. It's also reported that the union will seek raises of 27.2 cents in valve, fitting, pump, and compressor plants.

### Rising Consumer Prices No Anomaly

Many believe that continued gains in the consumer price index during a recession are something new. Not so, Prof. Jules Backman of the New York University School of Commerce told the annual meeting of the National Industrial Conference Board. "In five recessions during the last 35 years, the index remained unchanged or rose three times and declined moderately twice," he said. "During one of the periods of decline, the index rose for the first seven months before turning downward." Referring to the current recession, he concludes: "Administered pricing per se has not prevented price declines, and market pricing per se has not prevented price advances."

### NAM Sees Harm in Kefauver-Patman Bill

If adopted, the Kefauver-Patman Bill would prevent a business from meeting a competitor's lower price. That, says the National Association of Manu-

## Outlook

facturers, would hurt consumers as well as businessmen. It explains: "The practical effect of the . . . bill is to tell every businessman, large or small, that if he is being undersold . . . , he cannot offer the customer the same low price unless he also grants the reduction to all other customers in his competitive area." If told he must do that, "the average manufacturer is likely to find such an action would be ruinous, and so make no reduction at all."

#### Prediction: U. S. Will Keep Atomic Power Lead

The U. S. will stay in front in the race for development of atoms for peace through placing in operation of many large nuclear powerplants by 1960-62, predicts Robert W. Hartwell, general manager, Power Reactor Development Co., Detroit. The plants will be of different types and designs, but that is not the result of a "hit or miss" program, he says. On the contrary, diversification will permit a selection of the most desirable designs for future reactors, Mr. Hartwell points out.

#### Future Bright, but Plants Underpowered Now

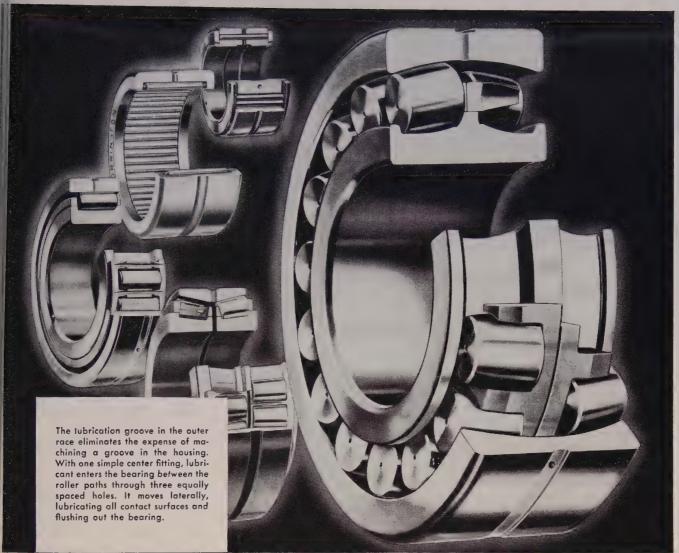
In the next 20 years, our standard of living will be 50 per cent higher than it is now, says A. C. Monteith, vice president in charge of Westinghouse Electric Corp.'s apparatus products divisions. Technological advances will be responsible, such as direct reduction of ores in the iron and steel industry. At present, however, hundreds of companies have inadequate electric power for their manufacturing facilities, and thousands of firms are using material handling equipment based on concepts that were obsolete in the 1930s, he asserts.

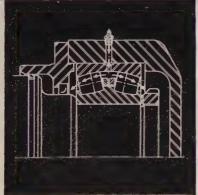
### Warehouses Stock Ingot Aluminum

Lederer Terminals, Cleveland, and Toledo Marine Terminals Inc., Toledo, Ohio, will distribute aluminum ingots to local fabricators. The new marketing method was originated by Aluminium Ltd., Montreal, Que. Ingots are to be shipped via the St. Lawrence Seaway.

#### Straws in the Wind

The number of workers collecting unemployment pay decreased 70,900 in the week ended May 3. This was the third successive weekly decline and the largest since the recession began . . . By the year 2000, 100 million small cars powered by gas turbines may be crowding U. S. highways, says D. P. Barnard, Indiana Standard co-ordinator for research . . . A bill sponsored by Sen. John M. Butler (R., Md.), would allow government insured mortgages on foreign ships built in the U. S. . . . Generating capacity of U. S. private utilities topped 100 million kilowatts when Tucson Gas, Electric Light & Power Co. put a new 75,000-kw generator in its Tucson, Ariz., plant.





## A time-proved lubricating method now available on Torrington Spherical Roller Bearings

The circumferential groove in the outer race has met the test of experience in many Torrington Bearings, including Heavy Duty Needle Bearings, Aircraft Type Needle Bearings, Tapered and Radial Roller Bearings. Now the circumferential lubrication groove is available in Torrington Spherical Roller Bearings.

This design feature makes it possible to introduce lubricant between the roller paths without the expense of machining a groove in the housing. This groove is proportioned to provide generous lubricant flow capacity. Lubricant moves through the roller paths, flushing used lubricant and contaminants away from bearing contact surfaces.

Torrington Spherical Roller Bearings in many sizes may be ordered with this groove as desired at no additional cost. For further information, see your Torrington representative or write: The Torrington Company, South Bend 21, Ind.—and Torrington, Conn.

### TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada

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May 26, 1958 53

# Armco 17 Stainless Steel Sheets Now Cost 20% Less Than Type 302

# In Many Applications, Type 430 delivers the most for the least

If you now use chromium-nickel stainless steels in products that don't come in contact with corrosive chemicals, sea water, or salt air, there's a chance that economical Armco 17 (Type 430) Stainless Steel can bring you substantial sayings.

Today, for example, the price base of Armco 17 (17% chromium) Stainless Steel sheets is about 20 per cent less than that of Type 302. That's a saving of  $11\frac{1}{4}$  cents a pound—\$225 a ton! The reason is that Armco 17 contains no costly nickel.

### Ideal for many products

If you have hesitated to specify chromium-nickel stainless

steels for your products because of cost, it may pay you to investigate economical Armco 17.

Typical examples of products that can be improved with this low-cost stainless steel include architectural trim, appliance parts, tableware, counter tops, hospital equipment, sinks and drainboards. In addition, its resistance to heat scaling and strength at high temperatures have made it ideal for heat exchanger parts, combustion chambers, and similar items.

#### Mail the Coupon for Details

Armco 17 Stainless is readily available in both sheet and strip. Why not check to see if this economical stainless steel is suitable for *your* products? It is also supplied in bar, wire and billets—at lower cost too. Just fill in and mail the coupon for complete information. There's no obligation.

# Other Armco Steels for top-quality products include:

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Cold-Rolled PAINTGRIP®

Cold-Rolled and Hot-Rolled

Electrical Steels

**Enameling Iron** 

High Strength Steel

Long Ternes

Stainless Steels

Steel Tubing

ZINCGRIP®

ZINCGRIP PAINTGRIP®



## ARMCO STEEL



Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation • Southwest Steel Products



The Depreciation Story

# Tell Congressmen

We believe that Congressional apathy is the greatest obstacle to the long overdue revision of this country's depreciation laws.

While Congress may authorize temporary or emergency depreciation help for production facilities, the majority of members appear reluctant to face up to the task of overhauling our archaic system.

Many congressmen claim "there's not enough time left in this Congress to consider permanent reform." Most of the bills introduced thus far call only for temporary relief.

The general indifference of many legislators, as indicated in a series of interviews by this magazine's editors, results from:

- 1. Their fear that the government will lose revenue.
- 2. Their belief that depreciation reform would benefit only "big business."
- 3. Their belief that the issue lacks vote-getting appeal. (Personal and excise tax cut proposals are more popular.)
- 4. Their lack of understanding of the issue (by far the most important short-coming).

Congressional thinking on the first three points could be changed by an understanding of the handicaps imposed by today's laws and regulations and the benefits that could be achieved by updating our national policy.

We suggest that it is your responsibility to help congressmen gain a more complete understanding of the problem.

How?

As individuals, invite your representatives and senators to your plant. Explain the hardships brought about by rigid and arbitrary regulations. Show them what you would do were it not for the penalties. Explain how new equipment purchases would create more jobs and larger payrolls.

Also tell the story to your employees. Point up the benefits and encourage them to join in the drive.

Also work through chambers of commerce, trade associations, or other organizations as groups to make more formal presentations. Ask small companies to participate. The small businessman, including the farmer, is more in need of updated depreciation laws than the giant corporation. The "big boys" are in a better position to cope with today's system because they have more adequate financing and more accounting and legal talent.

Many industrial leaders already have joined us in this drive.

We need all of you.

Walter J. Campbell



# WASHERS

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Clean hands do better work, result in cleaner work-manship on the assembly line. With washed washers, workers' hands stay clean. There is no grime, grease, graphite or other foreign matter to rub off on workers hands or on the work itself. Upholstery and woodwork is not soiled, metal components, painted and plated surfaces stay clean.

The new washer washing process, which also includes rust resistant treatment, recently introduced by Wrought Washer, is used on all popular sizes of U. S. Standard and S. A. E. Washers, on Rivet Burrs and Machinery Bushings, as well as most special washers and stampings. Add this new washing process to the consistent high quality for which Wrot Washers are noted and preferred ... and you have a positive Plus Value at no extra cost.

If you use washers in your products... Wrot Washer can meet your requirements with every type, size, material and finish... and with quality that matches your own high standards. Write for Catalog No. 40.

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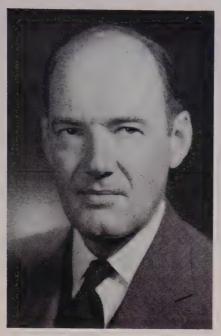
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BENJAMIN F. FAIRLESS President, AISI



D. S. HOLBROOK
President, Algoma Steel Corp. Ltd.



R. L. GRAY
President, Armco Steel Corp.

# **AISI Hits Tax Laws**

"A MIDDLE ground approach is the right answer to our foreign trade problem."—R. L. Gray, president, Armco Steel Corp., Middletown, Ohio.

"WE MUST FIND the real causes for the recession, and, more importantly, the steps that will take us back to the main road as rapidly and soundly as possible. We see good indications that we may now be on our way."—Benjamin F. Fairless, president, AISI.

"DEPRECIATION is a critically important issue with you. The Canadian government has shown better understanding of the problem than has the U. S. government, I believe."—D. S. Holbrook, president, Algoma Steel Corp. Ltd., Sault Ste. Marie, Ont.

Those were the themes of the three main addresses at Thursday's (May 22) general session of the American Iron & Steel Institute in New York City.

### Should We Have Free Trade?

"We should strive toward trade liberalization as our long range goal, but we must be cautious about it," asserted Mr. Gray. "We can't compete on a free trade basis unless we narrow the wide gap between our labor costs and those of foreign competitors," he warned.

Cause for Alarm—"The import situation is growing more painful

every day. We can continue free trade or revert to protectionist policies," declared Mr. Gray. He listed these consequences of a return to trade restrictions:

• The possible loss of a big steel market. Export was fifth largest market last year. And exports of steel mill products exceeded imports by about 4 million tons.

• Raw material problems. We depend on foreign sources for chrome,

# Top Steelmen See Price Hike

WILL steel prices go up as a result of wage increases in July? Some top executives at the American Iron & Steel Institute meeting think they will.

Charles M. White, chairman, Republic Steel Corp., thinks there should be an increase. The industry can't absorb an increase of such magnitude unless companies "all are going to go in the red and stop paying dividends." He feels the price increase should be \$11 a ton "because that's what the cost increase will be."

Arthur B. Homer, president, Bethlehem Steel Corp., says he is not speculating on steel price changes but refers to a previous statement that "we'd have to raise prices if wages increase."

R. L. Gray, president, Armco Steel Corp., thinks a price increase is "inevitable." Armco will have to raise prices regardless of what others do, he adds.

Avery C. Adams, president, Jones & Laughlin Steel Corp., feels an increase is justified. He will not estimate its size or probability, but says "any increase in prices would be helpful to sustain earnings."

Joseph L. Block, president, Inland Steel Co., asserts: "I have no idea that they will be increased but they should be so far as costs are concerned."

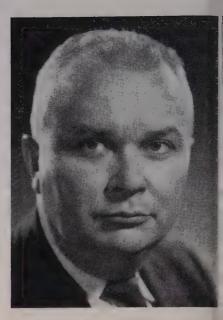
### **AISI Award Winners**



J. M. STAPLETON U. S. Steel Corp.



JOHN R. HUNT Tennessee Coal & Iron Div., U. S. Steel Corp.



J. R. SIBAKIN Steel Co. of Canada Ltd.

Mr. Stapleton, assistant to vice president-iron production, U. S. Steel Corp., Pittsburgh, won the AISI medal for a paper of special merit and importance read before an institute meeting. Mr. Hunt, chairman of operating com-

mittees, Tennessee Coal & Iron Div., U. S. Steel, Fairfield, Ala., and Mr. Sibakin, metallurgist, Steel Co. of Canada Ltd., Hamilton, Ont., were winners of regional technical meeting awards

nickel, and tin. We're becoming more dependent on them for zinc, manganese, and iron ore.

• A weakening in our fight against Communist encroachment. Over the last five years, Russia's rate of increase in industrial production was about five times that of the U. S. Her steel output rose 1.5 times faster than ours. During 1958's first quarter, she made 15 million tons of ingots, vs. our 19 million tons with less than half our capacity.

The other side of the coin: Mr. Gray warned that continued liberalization of trade policies could lead to "dangerous depletion of certain vital resources." He noted that, during a period of high production, the U. S. could easily concentrate on products not affected by low priced imports. "But with operations at a low level, it's impossible for us not to be concerned when foreign steel prices drop from \$25 a ton above our prices to \$25 below them as they have today," he pointed out.

What Hurts Most—Our greatest curse, contends Mr. Gray, is feather-bedding in government, manage-

ment, and labor. "We must eliminate it if we're going to keep up with progressive competition from abroad," he declared. "That means labor must take a more realistic attitude in its wage demands and do everything it can to increase productivity; management must cut administrative costs and step up output per manhour through technological improvements; government must increase its efficiency," Mr. Gray concluded.

### Follow Canada on Depreciation?

On Jan. 1, 1949, Canada replaced straight line depreciation regulations with a declining balance system and, in 1951, provided accelerated amortization for iron and steel expansion. Result: The Canadian iron and steel industry has doubled its ingot capacity and trebled its investment in ten years.

So said Algoma's president, D. S. Holbrook. He expressed that growth in terms of Canada's 1957 production.

Among his examples:

• 80 per cent of the coke was made in ovens built in the last ten years.

- 40 per cent of the hot metal came from blast furnaces built in the last seven years.
- 50 per cent of the ingots came from furnaces built in the last seven years.

Out in Front—Mr. Holbrook said Canadian companies enjoy a distinct advantage over U. S. firms in depreciation allowances for tax purposes. Canadians can recover more than two-thirds of the cost of heavy machinery in the first five years—and a full year's allowance is granted on acquisitions made any time during the year.

Changes in U. S. depreciation laws would counteract the inflationary spiral of wages and costs because they would have the effect of reducing costs through increased efficiency, Roger M. Blough, chairman, U. S. Steel Corp., said. Even an improvement in our international stature would result from such a move, he stated, adding that "there are so many factors in its favor and none I know of against it."

He expressed belief that sentiment in industry and lately in Washington was for such action from the standpoint of improving the nation's industrial capacity and efficiency

nd of creating jobs.

"Our job is to whip the recession and get back on our economic feet," Ir. Fairless told the steelmen. "We hay do it with short range actions, ut they better have long range oals. The main task of government is to help private enterprise do he job that only it can do: Create apital, private jobs, goods, and pervices," he asserted.

## Timely Topics

AISI technical speakers tackle oproblems in production, research, and uses of steel

BHOWN at right are AISI's technical session speakers. They concentrated on operating and metal-

durgical problems.

The institute divided technical meetings into three programs. In the operating session, J. H. Stoll, chief metallurgist, Bethlehem, Pa., plant of Bethlehem Steel Co., discussed: "Vacuum Pouring of Ingots for Heavy Forgings." J. H. Strassburger, assistant vice president, Weirton Steel Co., Weirton, W. Va., presented a paper entitled: "Evaluation of the Blaw-Knox Ruthner Process Pilot Plant."

N. P. Veeder, president, Granite City Steel Co., Granite City, Ill., was chairman of the session.

Research—In this session, A. O. Bergholm, mechanical engineer, Franklin Institute, spoke on "The Buckling Strength of 301 Stainless Steel Plates and Columns." R. M. Fisher, research associate, U. S. Steel Corp., discussed "Electron Optics in Metallurgical Research."

A. M. Tredwell Jr., president, Sharon Steel Corp., Sharon, Pa.,

was chairman.

Applications — In this section, A. J. Lena and E. E. Reynolds of the research laboratories, Allegheny Ludlum Steel Corp., Pittsburgh, analyzed high strength steels for aircraft applications. W. O. Everling, manager of research, American Steel & Wire Div., U. S. Steel, Cleveland, presented a paper: "Steel in Prestressed Concrete."

V. H. Leichliter, president, AS&W, was chairman.

## **AISI Technical Session Speakers**



J. H. STOLL Bethlehem Steel Co.



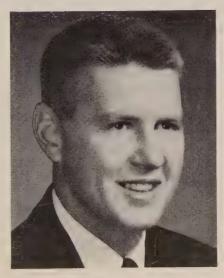
J. H. STRASSBURGER Weirton Steel Co.



R. M. FISHER U. S. Steel Corp.



W. O. EVERLING American Steel & Wire Div., U. S. Steel Corp.



E. E. REYNOLDS
Allegheny Ludlum Steel Corp.



A. J. LENA Allegheny Ludlum Steel Corp

# France Fears Inflation

Although gross national product is expected to climb 20 per cent this year, only one-fourth of the increase will be real. The rest will represent higher prices

DESPITE the current threat to the Fourth Republic, France is prosperous. But it's an uneasy prosperity threatened by further infla-

In mid-August, 1957, the value of the franc was cut 20 per cent. It was worth 350 to the dollar before devaluation, 420 after. Those are the official figures, but francs are easily available in the black market at 450 to the dollar.

Resume of the Facts-Figures (all at 350 francs to the dollar for comparison) on France's gross national product show what is happening: In 1956, the GNP rose to a new record of 18,325 billion francs (\$52.4 billion); the 1957 figure jumped to 20,520 billion francs (\$58.6 billion); the 1958 GNP is expected to climb 20 per cent to 23,710 billion (\$67.7 billion).

Three-fourths of the increase this year will represent higher prices, one-fourth larger physical volume. Wholesale prices in March were 166.7 per cent of the 1949 average (vs 143.6 a year ago) and are still rising. Wages also are increasing steadily and special bonuses are being offered machinists and other skilled workers.

To prevent a further drop in an unfavorable foreign trade balance. France needs to import more raw materials and further restrict purchases of finished goods abroad. The emphasis is on home production. France spent over \$2 billion in the last ten years mechanizing mines and still must import 20 million of the 80 million tons of coal needed yearly. Half the imports are from the U.S.

Steel Output Increased—Over \$2 billion has been invested in France in the last decade for steel modernization and expansion. Current difficulties apparently have had no

detrimental effect on the five-year plan (1957-61) to spend over \$1 billion in adding 4,408,000 tons to present capacity of 15,979,000 tons. In the first quarter, French mills produced 4.2 million tons of steel ingots. This was 8 per cent higher than first quarter figures in 1957 and a record three-month period.

Outlook for Steel-Production in 1958 may match the 14.8 million tons turned out last year. Exports are down but demand remains strong locally and French prices are lowest of the six European Coal and Steel Community countries. French equipment builders are busy and booked well ahead. E. W. Bliss Co. of Paris has enough stamping press orders to keep its 350 workers busy for a year, President Roger Rivolta reports. One order is from Renault for 18 presses.

The French auto industry is enjoying a phenomenal year. Production of cars and trucks hit 287,-927 units in the first quarter (25.5 per cent ahead of last year). Nearly a third of the cars are going abroad, including over 3000 a month to the U.S.

France has a large untapped market for home appliances, office equipment, and a wide range of industrial products. But, as many U. S. manufacturers have already learned, a complex system of import duties, licensing, and quotas makes it virtually impossible to sell directly into the French market. It can be done only by making arrangements with French manufacturers.

This is another in a series of on-the-spot reports on European metalworking by Steel's editor-inchief, Irwin H. Such. He is now in Russia to gather material for special articles which will appear

## Casting Costs Eyed

Visitors at Cleveland foundry show see array of mechanized equipment, new products

FOUNDRYMEN on the lookout for cost-cutting methods exhibited a keen interest in the mechanized equipment on display last week at the American Foundrymen's Society show in Cleveland.

Designed to keep the castings industry moving forward and in a strong position to meet competition, this year's show had something for everyone—from the large production foundry to the small jobber.

Shown-Automated Foundry American Automation Corp., Ann Arbor, Mich., exhibited, in literature and photographs, a completely automated foundry being operated in Switzerland. Operated by nine men, the system can process up to 300 molds an hour. Maximum production for 20-lb castings is 3 tons per manhour.

An operating display of foundry equipment, probably the largest display at the show, was exhibited by F. E. North America Ltd., Toronto, Ont. Equipment included an automatic molding machine, core blower, sandrammer, automatic core handling, mold conveyor, and complete sand preparation plant.

Operating Exhibits Plentiful—On the lower levels of Cleveland's Public Auditorium, foundrymen were confronted on all sides by operating exhibits of molding machines, both shell and sand; and coremaking machines, shell, oil sand, and CO2 processes. International Foundry Supply Co., Reading, Pa., was melting 50-lb heats of Alcoa 356 aluminum in a gas-fired Revecon furnace in 12 minutes.

Whiting Corp., Harvey, Ill., exhibited its 56-in., water-cooled cupola with tuyeres made of fabricated copper.

Several exhibitors showed displays of induction melting and vacuum melting equipment for the foundry.

New Abrasive Introduced—Pangborn Corp., Hagerstown, Md., introduced its new vacuum cast steel shot at the show. Made of electric furnace alloy steel, the material has high density and is practically free of voids and defects.

### What To Tell 'Primes'

Your presentation of this information to prime contractors may affect your success in getting subcontracts, say Navy officials:

#### GIVE:

Corporate name and plant location(s).

Names and addresses of affiliated firms.

Name and title of company official who'll answer primes' questions.

#### **DESCRIBE:**

Present products in detail. (Include catalogs and price lists.) Products made for defense during World War II (with pictures, if available), names of agencies or prime contractors, delivery record. Products you feel capable of making. (Be specific.)

#### LIST:

All machinery and equipment—show types, sizes, age, and condition. Feature any special-purpose tools. Mention tolerances you can adhere to. (Consider using photos.)

Contemplated sources of any new tools needed.

Firms that can supplement your facilities as subcontractors (like foundries, plating plants, machining shops).

Total plant capacity and percentage available for subcontract work.

Plant area, buildings, type of construction, layout. (Drawings are helpful.)

Three representative customers.

#### SHOW:

Access to railroads, truck routes, airlines, waterways. (Describe plant loading facilities.)

Inspection and testing facilities.

Number and types of personnel, including management, engineering, technical, skilled, and unskilled. Stress any unusual skills. Mention any training facilities. (Biographical sketches of key engineers, showing training and experience, can be a strong sales point.)

#### SUPPLY:

Full financial information—credit, financial report.

#### INDICATE:

Whether plant security measures have been approved (and by what agency).

List fences and other physical protective devices and systems.

# How To Sell for Defense

SMALL FIRMS have to jump a hurdle to get defense business. "But it's largely mental, not physical," contends Robert Palmer, president, Palmer Mfg. Co., Cleveland.

The manager of a small production machine shop says: "In more than ten years of doing business with both government and industry, I've found the least red tape on government jobs. Because of military contracts, we're operating at capacity 50 hours weekly and present employment (50 workers) is double that of a year ago. Of total sales—I expect a record \$1.5 million this year—95 per cent are to Uncle Sam."

Plenty of Opportunity — Mr. Palmer's views were echoed by government procurement officials and prime contractors at a Cleveland "small business opportunity conference"—one of 11 such meetings planned for major U. S. cities. Sponsors: Cleveland Chamber of Commerce, Small Business Administration, Commerce Department, Army, Navy, Air Force, and Smaller Business of America Inc.

Twenty-four prime contractors and 11 government procuring groups exhibited components they'll purchase from small firms. The 750 businessmen who viewed the parts had an opportunity to bid on them. Some figure they did quite well. Example: A small Ohio stamping firm is negotiating for long term contracts with both the Atomic Energy Commission and Army Chemical Corps on items they displayed, reports James G. Garwick, SBA regional director.

Selling to Primes—While there are many prime contract opportunities for small firms in research and development and specialized production jobs, the big chance is in subcontracting. Procurement people indicate these are the steps to follow in seeking orders:

1. Analyze your facilities to see what you're best qualified to make. (See Steel, May 19, pp. 96-97.)

2. Check on the possibility of joining forces with other small firms.

3. Prepare a statement or brochure about your company (see checklist).

4. Write to SBA, the Chamber of Commerce, and other like groups to get your name placed on mailing lists for information on subcontract and prime contract opportunities in your area.

5. Seek out primes who appear to have a need for your capabilities and cultivate good relations with them—it's a selling job. Personal calls usually get best results. Show your qualifications for any specific job you have in mind. Or use this approach: "Here's how I could make this component for you if you want to bid on that job for the Air Force."

6. Find how the prime contractor expects you to function on tooling, submitting production samples, deliveries, and the manner in which engineering changes are processed.



Mills, Ways & Means chairman, favors inflation-type bill



Byrd, Finance Committee head, opposes any kind of tax cut

# Depreciation: Help on Way

CHANCES are good that some form of stopgap action on depreciation will be taken by this Congress.

But it's pretty certain that the legislation will bear little resemblance to the bills that have been made public to date. Permanent relief seems to be out of the question until the next Congress convenes, and fast amortization probably won't win approval now. (Some temporary or partial depreciation relief, such as that proposed by STEEL, Apr. 28, seems to be in the works for this session. Wider, permanent reform, also recommended by STEEL, probably will have to await Congressional action next year.)

Many Democrats and Republicans in the House reportedly favor a measure that takes something of a stab at inflation. Although it has not taken final form, the bill will probably follow this pattern: Say you buy a tool for \$25,000 and must replace it in ten years with one that

costs \$50,000. You will be allowed some sort of credit on your taxes. The details are being worked out by several leading Democrats in the House. Chances are the bill will include a retroactive feature.

Look for small business to get help from a bill sponsored by Rep. Wilbur Mills (D., Ark.), chairman of the House Ways & Means Committee, and Rep. Daniel Reed (R., N. Y.), ranking minority member of the committee. It provides: 1. An ordinary (rather than capital) deduction for income tax purposes on losses from investment in small business stocks up to \$50,000 in one year. 2. Accelerated depreciation on used property up to \$50,000. 3. Partnership-type tax treatment by small business shareholders, if they want it. 4. Payment of estate taxes over ten years.

Other Relief—The House is also expected to vote for straight extension of corporate and excise taxes.

Although tax cuts make political sense, Capitol Hill is still wary of measures that dig too deeply into revenues. That explains why representatives won't recommend a reduction in excise taxes, even though they believe that the Senate will make some adjustments.

Schedule—The Ways & Means Committee will probably start a long series of closed sessions on tax legislation during the week of June 2. It looks as if earlier action will be impossible because of the expected floor fight on the Reciprocal Trade Bill.

Sources close to the House say the committee will follow this schedule:

- 1. Vote for straight extension of corporate and excise taxes.
  - 2. Vote for the small business bill.
- 3. Vote for some form of depreciation relief.

Some believe that the depreciation bill will be a rider on the small business bill. Others think it will be a separate measure.

Sentiment—Don't count on a lot of help. Insiders believe that any depreciation bill or bills reported out of committee will be motivated

tore by political expediency than by the desire to give the economy boost over the long pull. Many paretic toward depreciation reform, light now they're concerned with intirecession measures with vote-

tetting appeal.

I Bills that are aimed at the use-1 al lives concept, such as those in-Foduced by Sen. Homer E. Capefart (R., Ind.) and Rep. Howard II. Baker (R., Tenn.), aren't given much chance because most congressmen feel that Bulletin F matters hould be handled by the executive ranch. In fact, the Internal Reveue Service is now sitting on a reolision of those regulations. (It's unerstood that the changes are not ar reaching and chiefly include aditions to the list of equipment inrented since the last revision in 942.)

Where House Stands—Since the Ways & Means Committee has yet o take action on tax legislation, nembers are generally reluctant to how their hands, but it is believed hat Republican and Democrat nembers are pretty much of the same mind. One source reports hat Chairman Mills has said: A bill that gives some allowance for nflation (like the plan mentioned earlier) or some similar formula will have to come out of committee this ression.

Another approach, progressive cuts in corporate taxes over a five-year period, is found in a bill sponsored by two other members of the Ways & Means Committee, A. Sydney Herlong Jr. (D., Fla.) and Antoni Sadlak (R., Conn.).

Representative Herlong says that two other Democrats on the committee would vote for the bill but that not all Republicans would. He hints that it doesn't have a chance of getting out of committee and believes that "gimmicks and gadgets" will prevail. He will probably go along with the thinking of Representative Mills.

Another committee member, Rep. Richard M. Simpson (R., Pa.), was expected to introduce a companion measure to Senator Capehart's. One source says: "I think he still intends to," but another thinks he has changed his mind since the Baker Bill was put into the hopper. It's understood that the Simpson Bill is an antirecession measure, while

Representative Baker's offers permanent help.

Where Senate Stands—In general, tax cut sentiment is stronger in the Senate than it is in the House at this time. But most of the senior law-makers won't commit themselves until they see which way the wind blows in the House.

One thing is certain: Sen. Harry Byrd (D., Va.) will wait as long as possible before committing his Finance Committee to a decision in the hope that he can push through a simple extension of corporate taxes by June 30. He is opposed to tax cuts, rapid amortization, and anything else that will increase our deficit.

Senator Capehart will tout his bill as being for millions of folks, especially the farmer and the little businessman. (It provides: "The depreciation period for any capital investment now based on up to and including a 15-year estimated useful life would be reduced by one-half. That portion of the estimated life on any capital asset exceeding 15 years would be reduced by two-thirds.")

The consensus of leaders on the Ways & Means Committee is that the Capehart proposal has bugs in it and that it would not stimulate capital spending. Sen. Ralph Flanders (R., Vt.) is "in sympathy" with the Capehart measure but believes that it's too late for this session of Congress to do anything of that nature. Sen. George Malone (R., Nev.) thinks that "inflation has destroyed our amortization principles." He will probably go along with action taken by the House. Sen. Joseph Frear Jr. (R., Del.) thinks the best bet will be excise tax relief, but he will probably support Senator Byrd's views.

Sen. Albert Gore (D., Tenn.) and Sen. Robert Kerr (D., Okla.) seem to be in the minority. They think the 1954 revision of the revenue laws went far enough.

Outlook — What will be the chances of long term depreciation reform in the next Congress? Representative Mills is "hopeful." Representative Simpson says such action is "an absolute necessity." Rep. Noah M. Mason (R., Ill.) predicts: The outlook "is bleak if the Democrats win stronger control of the House and Senate, as I think they're going to do."

## Tax Decision Soon

Delegates to AMA conference set up antirecession program. Ike sounds optimistic note

A DECISION on whether to cut taxes will be made soon, President Eisenhower promised last week at an economic mobilization conference in New York. The conference was called by the American Management Association and was attended by top U. S. industrialists.

Voices from Industry—Ralph J. Cordiner, chairman, General Electric Co., said he felt the worst of the recession was over and an upturn might be trying to get underway.

Mr. Cordiner cited the fact that incoming orders for GE were significantly higher in March and April than the disappointing level of January and February.

Frederick R. Kappel, president, American Telephone & Telegraph Co., said: "Elimination of (federal excise) taxes would encourage expansion in the communications and transportation industries."

Continued Mr. Kappel: "These taxes eat into profits, and profits are the vehicle that allow us to do things ahead of demand (such as research and expansion)."

The Summing Up — Elmer L. Lindseth, president, Cleveland Electric Illuminating Co., offered a 12-point program to improve business. It was derived from suggestions made by speakers at the conference. Included are:

- 1. Look closely at the cost of every product and service to eliminate waste.
- 2. Sell "smarter and harder" and back up salesmen with better promotion and advertising; be more creative in developing new markets.
- 3. Reduce prices if you can build volume that way; if not, try to hold prices firm.
- 4. Maintain or increase research and engineering, particularly new product development.
- 5. If possible, maintain capital expenditures to replace obsolete plants and equipment.
- 6. Use every skill of good management; don't sacrifice long range goals for short range expediency.



### **Better Relations Needed in South America**

LOOK FOR a three-point economic program for South America to come out of Congressional distress over Vice President Nixon's Venezuelan reception. Sen. George Smathers (D., Fla.), a member of the Interstate & Foreign Commerce Committee, who is rapidly assuming qualities of Capitol Hill leadership, suggests:

1. A "stable" trade policy. 2. Assurance South America will get its share of loan funds. 3. Special economic assistance in health, education, and sanitation.

U. S. trade, says Senator Smathers, is the "economic lifeblood" of South America. Our recession has generated a call for higher tariffs on Latin imports. The senator believes this would protect U. S. domestic interests but lose the southern continent to Communism, as well as cut off its dollar supply for purchases of our automobiles, steel, and chemicals. Of course, if Latins can't buy from us, they'll be prone to barter with Russia.

For U. S. miners, the senator offers: "Stockpiling of lead, zinc, and copper from the mines of Mexico, Chile, and Peru." This would allow domestic mines to supply our needs without excessive competition from the south.

On the other side of the aisle, Sen. Alexander Wiley (R., Wis.), ranking Republican member of the Foreign Relations Committee, agrees with Senator Smathers to a point. He thinks "the attitude of the U. S. toward Latin America can certainly stand revision." He cites need for "a mutually beneficial trade policy."

With mutual aid funds not yet appropriated by Congress, further cuts in the administration's program (the House cut it \$339 million in its authorizing legislation) remain possible because of the recession and indications funds are being wasted. Stoning of Mr. Nixon, however, has boosted the popularity of aid funds among many congressmen.

### To Convert Raw Stockpile Materials

Sen. James Murray (D., Mont.), Interior Committee chief, wants to force the Office of Defense Mobilization to convert stockpiled ores "into a maximum state of immediate usefulness." Involved are chromite and

manganese ores and concentrates to be used by ferrochrome and ferromanganese plants to supply the steel industry.

At least 19 other senators are backing Senator Murray in a formal resolution before the Government Operations Committee. This move and Senator Smathers' call for a new stockpile program are first indications Congress wants to keep the U. S. metals and minerals buying program going. ODM's present plan is to kill it for everything except special high temperature alloying materials.

### Businessmen in Government: How Good?

A Hoover Commission finding that "the greatest weakness in government is in expert managerial direction" is verified by a report from the Harvard Business School Club of Washington. A special club report says: "The government does not take continuing action to recruit and retain businessmen or any other type of executive manpower."

The report recommends a central White House recruiting office for government service and an attempt to get businessmen to stay longer in Washington (average length of service is under two years). Although some civil servants view businessmen in government as opportunists, they generally respect the "different attitude" businessmen bring to Washington, points out the report.

### Rough Going for the Trade Act

Despite efforts of some administration backers to delay a showdown on the Reciprocal Trade Act, the House Ways & Means Committee voted to extend it for five years (as the President wished), but added some provisions to favor protectionists.

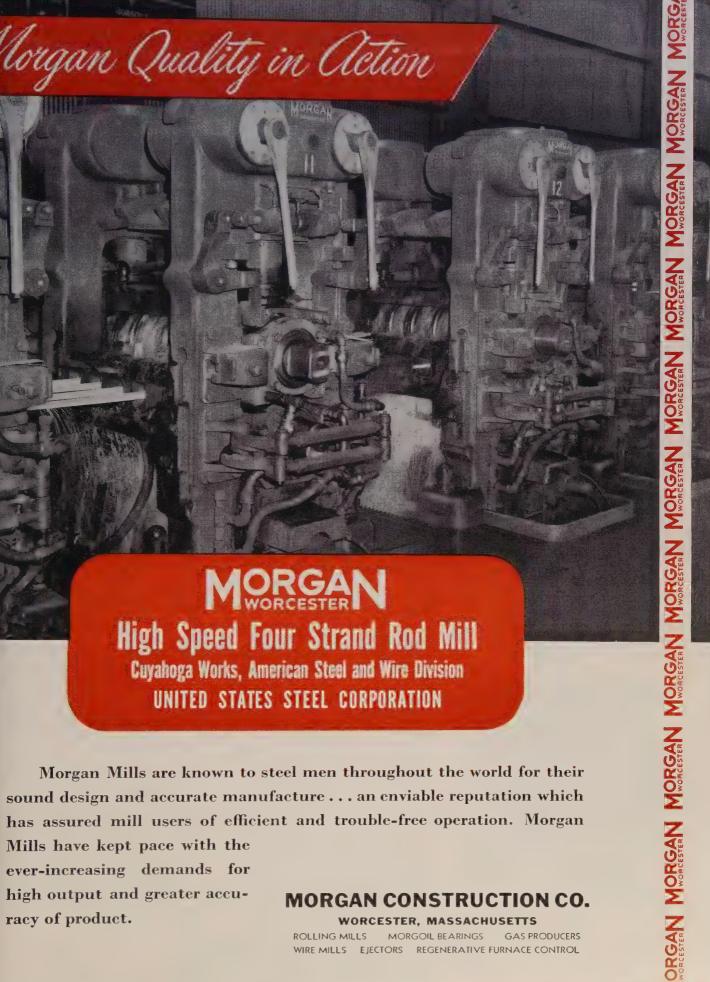
At the last moment, some liberal traders wanted the act extended for only one year and without protectionist amendments. That would have brought up the act for consideration again next year (presumably, the economy then will be steadier and congressmen won't be concerned about elections).

The committee's bill needs a two-thirds vote by both houses to overrule Presidential decisions against Tariff Commission recommendations for protection of domestic industries. (In the last few years, the commission often has recommended higher tariffs but the President usually has refused to go along.)

Committee leaders reportedly give the bill an even chance. Meanwhile, protectionists are backing a bill (to extend the act for two years) which has requirements for much higher tariffs and quotas. It comes to the floor next week.

### **Capitol Notes**

ODM will soon set up regional units of the National Defense Executive Reserve . . . Defense dollars paid to small business subcontractors dipped from 21.5 per cent of military contract receipts in the last half of 1956 to 20.5 per cent in the last half of 1957.



RM-70



Interstate Drop Forge Company-

# 20 Years a Cities Service Customer and Still Forging Ahead!



The modern way to cut a die is typified by die sinking machine, one of many at Interstate Drop Forge Company. All die sinking machines are lubricated by Cities Service lubricants.

With production running at roughly 1000 tons per month, Interstate Drop Forge Company of Milwaukee is one of the largest forging concerns in the Wisconsin area and growing all the time.

An integral part of this growth story, Cities Service is proud to have filled Interstate's lubrication needs for the past 20 years.

Drop hammers...helve hammers... upsetters... forging rolls... shapers... automatic metal saws. These are but a few of the diversified machines lubricated by specially tailored Cities Service oils and greases.

Actually, in a plant of this type with

so many differing pieces of machinery, it would be possible to have as many as 25 different lubricants. But, Interstate, with the aid of their Cities Service Lubrication Engineer has been able to standardize on twelve Cities Service lubricants.

Streamlining . . . standardizing . . . improving. These are some of the services a Cities Service Lubrication Engineer can render for your operation, too. Ask him to make a free lubrication survey of your plant. Call the nearest Cities Service office or write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

CITIES ( SERVICE

QUALITY PETROLEUM PRODUCTS



National Supply Co.

# Inventories Force Slowdown

A TOUR of U. S. and Canadian oil fields this week would show about 1910 rotary rigs in operation—24 per cent below the year-ago figure. Men who make and sell oil field equipment tell a sad story: Sales are down 25 to 30 per cent from last year's record high, and no improvement is expected before the fourth quarter.

There's nothing wrong with the equipment business a higher drilling rate wouldn't cure. The trouble: Too much crude oil on hand.

Corrective Measures — During 1957, the problem was subjected to a double-barreled attack: 1. A cabinet committee recommended that oil companies voluntarily limit imports to 12 per cent of 1954 pro-

duction. 2. The Texas Railroad Commission (charged with conserving natural resources) reduced the number of oil producing days in that state from 18 a month to 12. When stocks continued to climb this year, the commission took further action. In April, it cut the allowable producing days to eight (the present level).

Why They Aren't Buying—If a contractor can operate only seven of his ten rigs, he dismantles the inactive equipment and stores it. When something breaks on an operating rig, he doesn't buy a replacement. He pirates from an idle rig. Result: Few orders for rigs or their major components. (Best sellers today are expendable items.)

Oil Country Goods—The market for drill pipe, tubing, and casing is even worse and may not improve perceptibly for a year. Tremendous inventories were accumulated last year when tubular goods were scarce. Now the oil companies are trying to unload. During the first quarter, mill shipments of oil country goods were only a third as great as those in the like period last year.

Imported pipe accounts for less than 5 per cent of oil country sales. Says a Pittsburgh mill executive: "Major oil companies want pipe approved by the American Petroleum Institute. They wouldn't buy imported pipe unless they had money tied up in foreign countries."

Memphis Decision—Tubemakers have another problem. Last November, a federal court ruled the FPC can't approve higher rates for natural gas transmission companies unless they are acceptable to utilities buying the fuel. Result: Expansion programs are being delayed. Before the ruling, it was estimated \$590 million would be spent on pipelines this year (vs. \$750 million in 1957).

Export sales won't match last year's figures, but may drop no more than 10 per cent. Rigs are being shipped into Libya and Tunisia for exploratory drilling. Prospecting is also being done in Turkey and Egypt. Saudi Arabia is a steady customer for supplies but an infrequent buyer of capital equipment. National Supply Co., Pittsburgh, a division of Armco Steel Corp., conducts a thriving business in Venezuela through a subsidiary company and several stores. It expects more competition soon, since Venezuelans plan their own pipe mill.

Looking Ahead—"There will be a gradual upswing in the next few months and an appreciable improvement in the fourth quarter," predicts William L. Wolfe, sales vice president of Jones & Laughlin Supply Co., Houston. Since February, crude oil inventories have dropped from 290 million to 276 million barrels. General feeling: Current inventory level should be 259 million barrels. If the Texas Railroad Commission concurs, production will probably be limited to nine or ten davs a month until autumn. Oil economists are counting heavily on population growth. They're expecting another boom by 1961.



Lift trucks are prepared for instrument and cowl installation at Towmotor Corp.

# **Equipment Prices Steady**

BUYERS of metalworking equipment can look for relative price stability through 1958. A few categories may see modest bumps, but business prospects aren't good enough for most manufacturers to justify a hike.

Any price fluctuations will probably be on the down side. But most equipment makers think price cuts have about ended. Reasons:

1. They believe the worst of the recession is over.

2. Labor and material costs are getting higher, while profits are shrinking. Many say they can't lower prices any more and stay in business—some firms are taking work near the break-even point. One qualification: If business worsens, competition, which was intense even before the recession, may force prices down more.

Here's the outlook for the rest of this year in eight categories:

Machine Tools—Prices have fluctuated little in the last six months. Some minor shading is reported, but

it's generally confined to extras like tooling. In most cases, the published price is the selling price.

Business is poor. The National Machine Tool Builders Association, Cleveland, says orders (metal cutting and forming machine tools) in the first quarter came to only \$90.5 million, vs. \$220.2 million in the like 1957 period. First quarter shipments registered \$159.5 million, vs. \$318.8 million last year.

The outlook is for prices to stay at present levels until yearend. Builders say business is bad enough without depressing it more with increases.

Manufacturers see little chance of prices going down. Unit production costs are going up because fewer machines are being turned out.

Says one manufacturer: "Only a whopping boom in general business could cause an appreciable price rise. I can see no change until some time in the latter part of 1959 or early 1960."

Lift Trucks — Companies report

sales are 8 to 25 per cent below last year's, making competition stiff.

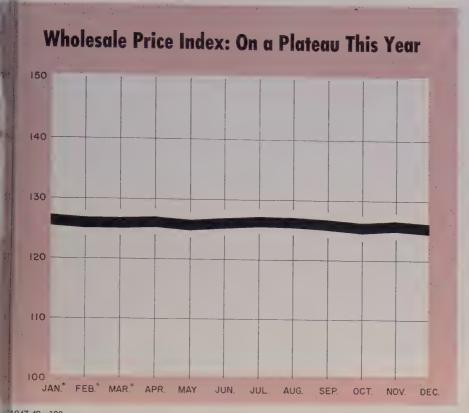
Manufacturers' prices have held fairly steady over the last six months. For the most part, list prices haven't varied. Only one firm reported a price hike (10 per cent) to Steel. Informal slashing of quotations is pretty rare.

Price trimming among dealers was common in last year's fourth quarter and this year's first quarter. It has about stopped now.

Most makers look for stable prices the remainder of this year. Low profit margins practically rule out any reductions. And any move to raise prices would meet heavy customer resistance. "But an increase in steel would certainly cause us to re-examine our price structure," says an Ohio company.

One manufacturer forecasts a 20-year pattern in lift truck prices: A 25 per cent gain in the next ten years and 25 per cent on top of that in the 1968-78 period.

Belt Conveyors—Business is down an average of 20 to 25 per cent. Like some other areas, the situation is spotty—a few firms are doing as well as they did last year; a few are doing better.



1947-49=100.

Includes all commodities other than farm products and food.
\*Bureau of Labor Statistics. All other figures estimated by STEEL.

Prices show some instability. Says one company: "There is definite price weakness in this field. Even the most ethical blue chip producers are cutting quotations. It's probable that prices are off 5 per cent or more from those of a year ago."

Most adjustments are hidden behind such euphemisms as "freight concessions."

Prices will follow general business conditions until yearend. One firm believes sales by August or September will be good enough to support a markup of 10 to 15 per cent. But the majority thinks it will be almost impossible to boost quotations. Says a midwest manufacturer: "Customers now insist on a firm price in contracts. So if we take an order for delivery later this year, we won't be able to raise that price even if we get hit with higher steel and labor costs."

Hydraulic Presses—Some producers haven't changed prices recently, but others say competition has stimulated fairly widespread price cutting. One producer estimates over-all prices are 10 per cent below what they were last year.

"Some manufacturers want to fill their shops so badly they'll not only operate at smaller per unit profit but sometimes quote under cost," says a midwest company.

Sales will probably hold near present levels (down 25 to 30 per cent) until yearend. But you may see some sporadic cuts, perhaps even a sprinkling of increases. Summation: Ascending costs counterbalanced by mediocre demand and sure customer resistance to higher quotations seem to indicate relative price stability in the months ahead.

Punch Presses—Most companies say their business is about 20 per cent under what it was last year. Result: Erratic price cutting. Says one firm: "Some companies are accepting business at a loss to keep their plants operating."

Most manufacturers have labor increases coming due this year as a result of contracts signed in 1956. Increases in the cost of raw materials would depress profits even more.

But costs alone won't force prices up because it's a buyer's market. Revisions will be feasible only if demand improves substantially. That failing, look for prices to hold at present levels the rest of '58, with some sporadic shading as companies maneuver to meet competition. A weakening in sales could make price cutting general.

Rolling Mills—Bidding is competitive, but producers doubt that much price shading is going on. "Orders usually go to the supplier that seems to have the best grasp of the engineering problem," says one company.

Industry sales are down 25 to 40 per cent from last year's but makers say they will have to boost quotations if steel and labor prices go up. Look for prices to be hiked 3 to

5 per cent in late summer.

Welding Equipment—This industry doesn't show a clearcut pattern. While prices have been generally steady this year, one firm says it changed some dealer discounts and discontinued some quantity shipment discounts. Another firm says it recently upped prices 5 per cent.

Competition generally determines prices in this industry. One midwest firm says reductions of as much as 50 per cent are being made to get business from certain depressed industries (such as automotive).

So far this year, sales are down

about 25 per cent.

Outlook: Although a few makers think a price upturn could come in the fourth quarter (because of increased sales), the consensus is that quotations will hold at about present levels throughout the year.

Industrial Furnaces—Some firms have held the price line; others have pared quotations 5 to 10 per cent, reflecting increased competition and the drop in certain component prices—mainly electrical.

Lower prices aren't too likely. The exception: The prices of some firms are still above the competitive

level; they may get in line.

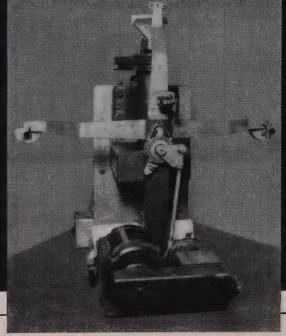
Some companies say they will have to boost prices later in the year if they get hit with steel and labor increases this summer. But unless business picks up substantially (it's down as much as 40 per cent for some makers), it's doubtful if a hike could be justified.

Outlook: Expect current prices to prevail through 1958, with a slight chance for a mild increase.

• An extra copy of this article, the third in a five-part series on metalworking's pricing prospects, is available until the supply is exhausted. Write Editorial Service, Steel, Penton Bldg., Cleveland 13, Ohio. On May 12, the editors dealt with steel prices; on May 19, with prices of components. In succeeding weeks, they will study the situation in construction and consumer durables.

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#### COMPARATIVE TEST REPORT

MATERIAL TESTED - \$660 CHILLED IRON SHOT

A - Cleveland Metal Abrasive B - Competitors C - Competitors

	SCREEN	AN	ALTSIS	
U.S. No.	S.A.E. , Spec.	- A	. В ,	·C
. 8	. 0	0	0	0
10		35.5	54.0	36.0
12	. 85	60.3	36.2	48.0
14	. 12	4.2	7.7	14.0
Pan	3	0	1.1	2.0

#### CHEMICAL ANALYSIS

	Α .	В	. C
T.C.	2.72.	3.29	2.42
Si	1.13	1.36	1.20
Рh	.05ć	.380	.130
Mn	40	.36	.47
\$	128	.176	.141
	D- HAD!	SNIFEE	

	A	В	С
Łow	58	59	57
High	62	65	62
Average	60	63	59

#### **BREAKDOWN TEST**

Thru U.S. No. 10 on U.S. No. 12 - No. of Grams Tested-100 - 100 Passes at 7200 R.P.M.

	A	В.	С
12	0	0	0
14	2	· O	.1
16	4	0	.5
18	4.8	.1	3.5
20	15.6	.2	9.4
25	24.4	7.9	20.7
30	13.5	8.4	12.1
35	9.9	10.6	11.5
40	4.1	11.3	6.0
45	2.7	7.1	4.6
50	2.0	14.2	3.4
Pan	13.7	27.6	17.8
Loss	8.7	12.6	10.4

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# Keep Importing or Build Here?





# Small Cars: Now or Later?

If import sales continue to grow, GM and Ford will commit themselves to small cars soon, say Detroit sources. They may decide to check the 1959 market first

IUNE is supposed to be the month General Motors finalizes plans to introduce an American-built small car in the fall of 1959. Current thinking around Motordom's capital: GM and Ford will wait until the industry recovers from this recession year.

Autodom is beginning to realize the small car craze is just part of a marketing revolution sweeping the industry. Everyone has picked up pieces, but it takes time to fit the puzzle together.

What Has Happened?—Perhaps a clue to the small car's future can be found by briefly looking at sales of different types of cars in the last seven or eight years, why changes occurred, and what may happen in the years ahead.

1. Luxury car sales remained high and grew a bit. Since 1949, the elite (Lincoln, Cadillac, and Chryslerlater Imperial) have consistently taken their traditional 5 per cent of the market.

In addition, GM upgraded Buick's Roadmaster and Oldsmobile's 98, so they, too, are considered luxury priced cars. This year, Mercury introduced its Parklane series, and Buick added the Limited series to make an even bigger play for the top dollar.

2. While the luxury market has held firm, the medium-priced market has been shrinking. Top-priced Fords, Chevrolets, and Plymouths have sidled into the medium price field. Registration figures show medium-priced cars accounted for 44 per cent of the market in 1952. Last year, they took only 34 per cent, and so far this year market penetration is around 31 per cent.

3. As upgrading continues, there is accelerating demand for more economical transportation (up to now filled primarily by imported

cars). Despite the recession, Ward's Automotive Reports indicates import sales will probably hit 300,000 units this year, up from 206,827 last year and 51,600 in 1955.

Why Did It Happen? - In the late '40s, car builders began responding to demands for bigger and better cars.

Those who could afford it moved into the luxury field and usually stayed. But average buyers couldn't keep pace, and as one executive puts it: "We just plain ran out ahead of what buyers could pay."

Result: When a customer could only afford a stripped Pontiac or Dodge, he took a Chevy or Plymouth and spent what he had left over for accessories like power steering and brakes. The horsepower race didn't help.

#### **Buyers 'Discover' Small Car**

During the 1954 slump, economy minded buyers rediscovered the European small car.

The movement faltered in 1955's lush market, but Volkswagen kept plugging, and by 1956 the rush was on. More and more European carmakers have hastened to tap what, to them, has become an important fringe market.

Driving a small car has become

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the "smart" and economical thing to do. The so-called reverse snobbery of the imports has made some observers like American Motors Corp.'s George Romney believe buyers no longer see a bigger car as a prestige symbol but prefer to show off with boats, swimming pools, and trips to Europe.

#### U. S. Builders Investigate

As imports climbed, Edward Cole, Chevrolet's general manager, and later, J. O. Wright, Ford division chief, indicated American producers would take a closer look at the situation when small car sales reached half a million units a year. (Ford earlier had said 5 per cent of the market, but the figure gave way as 1958 sales dwindled.)

Actually, the companies were keeping tabs on the market, and Ford and GM pushed ahead with small car designs. Earlier this year GM released orders for parts to its Holden subsidiary in Australia. The understanding around Detroit has been that GM would be ready to move if the demand called for buildups here. If not, the tooling could still be used for the Holden car.

Some engine and transmission tooling, reportedly for a second GM small car, has also been placed in the U.S. But reliable sources say it only amounts to about \$5 million, most of which is for rebuilding available equipment. (Much of the tooling could be used for conventional cars.)

Starts Talk-But the tooling releases and talk led to the conclusion that GM aimed to bring out the small car in the fall of 1959 for the 1960 model year. Apparently, that was the plan. But unless the present evidence is a smoke screen, it looks like car builders will wait through 1959 to see what happens to small car sales after what is hoped will be a recovery year.

If import sales continue to grow (several makers have indicated they may settle around 300,000 units a year), and if cars like Chevrolet (reportedly bigger for '59) continue to make inroads into the medium price market, Ford and GM will probably commit themselves to an American-built small car.

Upgrade To Make Room-If and when that happens, there's likely to be some reshuffling of present car lines. Cars in the top medium priced series will be upgraded to bring them closer to the luxury market.

Lower medium priced cars (like Mercury's Monterey and Pontiac's Star Chief) may be dropped and replaced by top priced Ford Fairlanes and Chevrolet Bel Airs. In turn, the low priced Custom (Ford) and Delray (Chevy) series will drop out, and the small cars can be slipped in underneath.

#### Small Cars Not So Small

What will the small cars look like? How much will they cost? Trade talk has it that neither Ford nor GM thinks the European type small car is really what the American economy car buyer wants. But it's about all that's available.

Both firms reportedly are designing small cars nearer to AMC's Rambler in seating capacity and size. They'll also be more stylish (Ford people hint at wraparound windshields) and are expected to have simple automatic transmissions as optional equipment. In keeping with economy demands, styles aren't expected to change often.

GM Program—Chevrolet is ramrodding GM's small car design, although the body will be the responsibility of Fisher Body Div., say informants. It reportedly is a four

#### U. S. Auto Output

Passenger Only January ..... 489,357 641,591 February ..... 392,112 571.098 March ...... 357,049 578,826 April ..... 316,503 549.239 4 Mo. Total 1,555,021 2,340,754 May ..... 531,365 June ..... 500,271 July ..... 495,629 August ..... 524,354 September ..... 284,265 October ..... 327,362 November ..... 578,601 December ..... 534,714 Total ..... 6,117,315 Week Ended 1958 1957 Apr. 19 ..... 73,219 118,327 Apr. 26 ..... 58,664 123,633 May 3 ..... 78,434 119,999 May 10 ..... 78,506 125,924 May 17 ..... 86,713† 172,390 May 24 ..... 80,000\* 127,428

Source: Ward's Automotive Reports. †Preliminary. \*Estimated by STEEL.

passenger, unit body job with a rear engine and transmission. Wheelbase is around 102 to 104 in.

Several engines have been considered, but a 4-cylinder, inline model with 150 cu in. displacement seems to have the edge now. Chevrolet has also looked at a V-6 and a flat opposed 6-cylinder engine (which reportedly hasn't panned out).

Competition - Other sources say Ford is down to three possibilities, One has a 90-in. wheelbase. Another is about the size of GM's imported Opel, and the third is a unitized job with a 106-in. wheelbase.

The last is the one Ford currently thinks has the best chance. The company reportedly believes its 4cylinder tractor engine (172 cu in.) might be the best power plant, although, like GM, Ford has other engines under consideration.

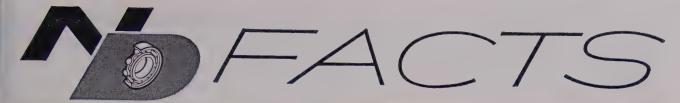
Production—Ultimately, GM indicates, it is thinking in terms of building half a million units a year in three different plants—one at Willow Run, Mich., another on the West Coast, and a third may be in Kansas City, Mo.

Ford's ambitions don't seem so vast. But this could be because the company still may import its German Taunus. Anyway, Ford's goal seems to be about 150,000 units annually. Chicago, Dallas, Maywood, Calif., Lorain, Ohio, and Kansas City are being investigated as potential assembly sites.

Not Cheapies - Since it costs almost as much to tool up for a small car as for a big one, prices won't be as low as those of many European offerings. But automakers figure even economy buyers will pay more initially for a car they can keep awhile without having it become outdated. The market will expand in proportion to the increase in total car sales (expected to be brought on by population growth).

Talk has it GM is aiming \$150 to \$200 under its present Chevrolet Delray which has a base advertised delivered price of \$2155. Ford will be close to that.

Outlook-The industry is trying to meet buyers' demands for a more economical car without slashing the big car markets. By the end of next month, GM should have decided whether to wait or to go ahead for 1960.





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# Graph-Mo® dies cut downtime 50% on deep draw for round vacuum cleaner!

ENGINEERS at The Hoover Company had a tough problem in getting that round vacuum cleaner shape in the new Constellation. The two circular dies that form the hemispheres often galled, picking up bits of the steel being formed. This scored the dies, marred the finished parts. Production had to be shut down while the dies were repolished. And extra polishing of the hemispheres ran up costs still more.

After studying the problem, Timken Company metallurgists recommended dies made from Graph-Mo®—a special tool steel developed by the Timken Company. Results were outstanding. The new Graph-Mo dies cut downtime 50%. The combination of free graphite particles

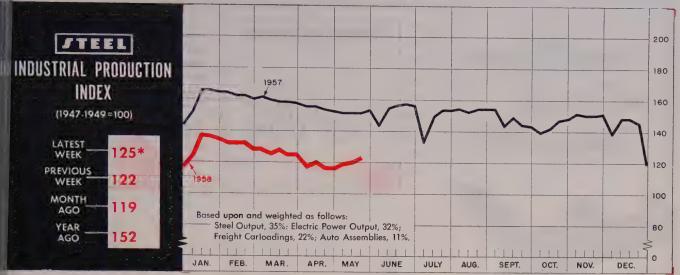
and diamond hard carbides in its structure make it outwear other tool steels 3 to 1. Production rolled smoothly and refinishing time was cut.

Graph-Mo machines 30% easier than conventional tool steels. And its uniform response to heat treatment eliminates distortion—saves time and money in lots of tough jobs.

Graph-Mo is one of four graphitic tool steels developed by the Timken Company. If you would like more information about their uses in dies, punches, gages and machine parts, send for the new Timken Graphitic Steel Book. The Timken Roller Bearing Company, Steel and Tube Division, Canton 6, Ohio. Cable address: "TIMROSCO".

# TIME STEEL

SPECIALISTS IN FINE ALLOY STEELS, GRAPHITIC TOOL STEELS AND SEAMLESS STEEL TUBING



Week ended May 17.

# Index Shows Third Consecutive Advance

FOR THE FIRST TIME in 41 weeks (with the exception of the post-Christmas period) every segment of STEEL's industrial production index increased from the previous week's reading. In some cases, the improvement was barely noticeable, but the combined effect raised the index to a preliminary 125 (1947-49 = 100) for the week ended May 17. That's the highest level in seven weeks.

Factors in Pickup—1. With the arrival of the first ore boats at lower lake ports, railroad activity this month began a gradual climb. Carloadings of freight are now above the 535,000-car level for the first time in over two months. 2. Steel production in the week ended May 18 totaled 1,412,000 net tons for ingots and castings, and steelmakers scheduled about 1,480,000 tons last week. That's the best output since the last week in January.

3. Auto and truck production is surprisingly strong at a little over 100,000 units a week, an increase of over 25,000 units since the lowest point of the year was reached in late April. 4. Perhaps most surprising of all, though, is the contraseasonal rise of electric energy production. At a little over 11.3 billion kw-hr a week, this is showing the most strength since late in March.

A Bit Short—Despite the increase

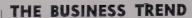
of almost 6 per cent in the index from its lowest point (118 during the week ended Apr. 26), the upswing probably will fall short of seasonal standards. This could result in a slight decline in the Federal Reserve Board's industrial production index for May. In April, that guidepost stood at 126 (1947-

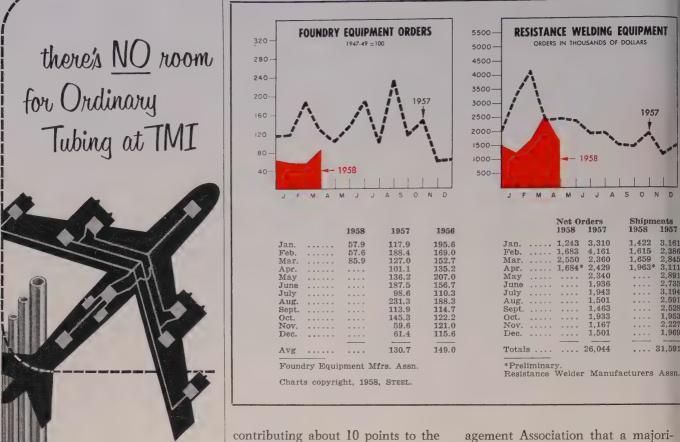
49 = 100) seasonally adjusted.

Clouded — As good as it looks right now, the future of STEEL's index is probably more uncertain than at any time since the start of the recession. Reason: Probable early shutdown and long changeover period in the auto industry. Currently, this segment is

BAROMETERS OF BUSINESS	LATEST PERIOD*	PRIOR WEEK	YEAR AGO	
INDUSTRY	1,4811	1,412	2,212	
Steel Ingot Production (1000 net tons) <sup>2</sup> Electric Power Distributed (million kw-hr) Bituminous Coal Output (1000 tons) Crude Oil Production (daily avg—1000 bbl) Construction Volume (ENR—millions) Auto, Truck Output, U. S., Canada (Ward's)	11,3501	1,412 11,315 6,350 6,220 \$380.6 105,188	2,212 11,519 9,602 7,511 \$357.7 162,537	
TRADE				
Freight Carloadings (1000 cars)  Business Failures (Dun & Bradstreet)  Currency in Circulation (millions) <sup>3</sup> Dept. Store Sales (changes from year ago) <sup>3</sup>	279 \$30.812	535 336 \$30,659 -8%	723 267 \$30,654 +3%	
FINANCE				
Bank Clearings (Dun & Bradstreet, millions) Federal Gross Debt (billions)	\$274.9 \$22.6 13,308 \$92.0	\$24,456 \$275.0 \$24.2 14,104 \$92.5 \$30.5	\$20,681 \$273.3 \$19.1 13,086 \$86.1 \$25.6	
PRICES				
STEEL'S Finished Steel Price Index <sup>5</sup> STEEL'S Nonferrous Metal Price Index <sup>6</sup> All Commodities <sup>7</sup> Commodities Other than Farm & Foods <sup>7</sup>	196.9 119.5	239.15 197.1 119.3 125.4	228.59 231.4 117.2 125.3	

\*Dates on request. <sup>1</sup>Preliminary. <sup>2</sup>Weekly capacities, net tons: 1958, 2.699,173; 1957, 2.559,490, <sup>3</sup>Federal Reserve Board. <sup>4</sup>Member banks, Federal Reserve System. <sup>5</sup>1935-39=100, <sup>8</sup>1936-39=100, <sup>7</sup>Bureau of Labor Statistics Index, 1947-49=100.





The kind of orders that gravitate to TMI permit no such thing as pampering in this busy "little" mill. They do, however, make us pull out every stop in cold drawing skills to keep pace with the demands for perfection written on those orders! In stainless steel or in special alloy . . . the TMI goals and the TMI results are the same: we keep our thinking and our methods flexible enough to tackle the impossible specifications with confidence while we remain steadfast in our precision workmanship. Put TMI and TMI tubing to the testany test-and you'll know why leading pioneers in metalworking work handin-hand with our people. We'd like to work with and for you.



METALLURGISTS . ENGINEERS . MANUFACTURERS

BRIDGEPORT (Montgomery County), PA.

over-all index. Ward's Automotive Reports adds support to the contention that producers will start phasing out 1958 model production in July, with '59 introductions scheduled for September or October.

How this will affect steel production depends on the forward buying policies of the automakers for new model buildups. While those policies are not yet well defined, it is logical to assume that with assembly lines down in whole or in part for three months, there will be no rush to stock steel.

Get Ready—This should set the stage for a fall revival that will push production to the year's best level by the fourth quarter. Not only will auto production climb, but output of other durable goods should start rising at the same time. Economists and business analysts are beating the drums at conventions this year as seldom before, and the consensus is overwhelmingly for an upturn in the general economy in the fourth quarter.

## **Presidents Optimistic**

Adding to the current optimism is a report from the American Man-

agement Association that a majority of 688 company presidents responding to a nationwide survey expect to match or better their 1957 sales this year. (The preliminary report does not give an industry-byindustry breakdown of the findings.) Despite anticipated sales increases, 57 per cent of the executives say that profits will fall, compared with 1957.

1957

Shipments

1,422 1,615 1,659

1,963\*

3.310

Other results of the survey: 1. 54.3 per cent of the companies expect to match or exceed last year's capital expansion. 2. 93.4 say they will spend as much as or more than they did last year on research and new product development. 3. Almost all will maintain or improve upon their direct sales effort and advertising and sales promotion budgets.

#### Equipment Orders Edge Up

Mild encouragement also comes from the monthly reports of two industry associations for durable goods. The Material Handling Institute Inc.'s latest bookings report (for March) moved up for the second straight month to 97.89 (1957 = 100). Industry leaders feel that this uptrend will continue, but that significant increases will not be



noticed until the first or second quarter of 1959.

The order index of the Foundry Equipment Manufacturers Association climbed to 85.9 (1947-49 = 100) in March, the best level since last October. Comments one observer: "This is a healthy sign, but it will have to continue climbing to catch up with a normal year's total." April may not be much better than March, but sales in May and June may show some upturn as a result of the American Foundrymen's Society meeting and show in Cleveland last week.

Not so encouraging is the April report of the Resistance Welder Manufacturers Association. It shows a fall in new orders after two months of significant increases. Orders dropped from March's \$2,550,000 to \$1,684,000, equal to the February total.

#### Inventories Near Bottom

Two more steel industry executives have pointed to the correction of the inventory situation as a prime force in the anticipated fourth quarter (or earlier) upturn in that industry. Joseph L. Block, president of Inland Steel Co., Chicago, states: "Up to Apr. 1, there

has been a reduction of about 7 million tons in steel inventories . . . during the second quarter there may be an additional 3-million-ton reduction, so that by the end of this quarter . . . there will be a 10-million-ton reduction in steel inventories." Steel users will have to increase their buying to maintain operations, he says.

Charles M. White, chairman of Republic Steel Corp., Cleveland, believes the "combination of a much improved inventory situation and normal seasonal patterns should result in better production in the fourth quarter."

#### Trends Fore and Aft

- Business failures dipped below the 300 mark for the third time this year when they totaled 279 during the week ended May 8, reports Dun & Bradstreet Inc., New York. In a special study of 1957 failures, D&B says that even though the total set a new record, the rate was still well below the heavy toll of 1939.
- The total for heavy construction awards during the week ended May 15 (\$435.4 million) has been exceeded only three times this year, says *Engineering News-Record*.



77





OHIO STEEL FOUNDRY LIMA, OHIO

LIMA... Virtually at the center of the steel industry



MICHAEL ZAJAC Buhr Machine Tool v. p.



JOHN A. McGUIRE Thor Power Tool exec. v. p.



ALAN F. KELSEY
joins Marchant Calculators



C. D. CLAPP
Hauserman dir.-manufacturing

Michael Zajac was named to the new post of vice president-engineering, Buhr Machine Tool Co., Ann Arbor, Mich. He was chief engineer.

John A. McGuire was elected an executive vice president, Thor Power Tool Co., Chicago. He was vice president and handled the company's labor policies and other executive functions. He now will work on integrating the company's five subsidiary plants.

William H. C. Webster was elected vice president-administration, Great Lakes Steel Corp., Ecorse, Mich., a unit of National Steel Corp.

Harold Tiley, former general sales manager, fills a new post of customer relations manager for Caloric Appliance Corp., Jenkintown, Pa. Harry J. Levin, former assistant general sales manager, was named sales co-ordinator.

John Anderson was promoted to assistant general manager; Daniel L. Janoff to chief engineer, material handling division, Heppenstall Co., New Brighton, Pa.

John J. Willis was elected a vice president of Illinois Engineering Co., Chicago, a subsidiary of American Air Filter Co. Inc. He continues to serve as sales manager.

Robert E. Kemelhor was named manager of future product planning and development for the Pesco Products and Wooster divisions of Borg-Warner Corp., Bedford, Ohio.

Alan F. Kelsey joined Marchant Calculators Inc., Oakland, Calif., as director of manufacturing. He held a similar post at Magna Power Tool Corp., and prior to that was vice president in charge of engineering and manufacturing at Hiller Engineering Corp.

Wencel A. Neumann Jr. was elected president, De Laval Separator Co., Poughkeepsie, N. Y. He also was elected president of the West Coast subsidiary, De Laval Pacific Co., Millbrae, Calif. C. B. Schmidt, whom Mr. Neumann succeeded, was named vice chairman. Mr. Neumann joined the company in 1954 as executive vice president-manufacturing.

Dorr-Oliver Inc., Stamford, Conn., elected James B. Hoxie vice president-production; Albert L. Morris, vice president-company relations.

Carl E. Rowe was elected president, Milwaukee Valve Co., Milwaukee, subsidiary of Controls Co. of America. He was vice president-general manager.

E. L. Oehling was promoted from general sales manager to vice president-sales, Hydraulic Press Mfg. Co., a division of Koehring Co., Mt. Gilead, Ohio. T. G. Bishop, former manager, plastics machinery division, was made product market manager. W. G. Kriner, manager of dealer sales, replaces Mr. Bishop.

George A. Markell was appointed sales manager, Elwell-Parker Electric Co., Cleveland. He was assistant sales manager.

C. D. Clapp was appointed director of manufacturing, E. F. Hauserman Co., Cleveland. He was general superintendent. W. B. Sauer, former manager of Steel Ceilings Inc., was named manager of Hauserman's Cleveland plant.

Robert O. Bass was elected president and general manager, Morse Chain Co., Ithaca, N. Y., subsidiary of Borg-Warner Corp. He was executive vice president and assistant general manager. Mr. Bass succeeds Stanley J. Roush, who relinquishes duties in Ithaca to devote more time to his responsibilities as group vice president in Borg-Warner's central office in Chicago.

Raymond H. Jones was promoted to director of profit control and computer programs at Sharon Steel Corp., Sharon, Pa. He was general auditor. Succeeding him is S. M. Cebulko.

Stanley E. Huffman Jr. fills the new post of sales manager, press division, E. W. Bliss Co., Pittsburgh. He was with Pratt & Whitney Co.

Allen W. Lishawa was appointed sales manager, special engineering products division, International Business Machines Corp., New York.

Howard F. White, co-founder and formerly executive vice president, Revco Inc., Deerfield, Mich., was elected president to succeed G. F. Forsthoefel, now chairman.

Aldo L. Tombari was made chief industrial engineer in charge of all



EDWARD K. WELLES new officers at Besly-Welles Corp.



WARREN C. OLSON



Detroit Power Screwdriver executives



JOHN M. SMALL

operations of Hettrick Mfg. Co., Toledo, Ohio.

Edward K. Welles was elected chairman and chief executive officer. Besly-Welles Corp., South Beloit, Ill. Warren C. Olson, executive vice president, was elected president and chief administrative officer.

Walter A. Sterling, president, Cleveland-Cliffs Iron Co., Cleveland, was elected to the additional position of chairman to succeed Alexander C. Brown, retired. W. E. Donahl was elected comptroller. D. E. Sadler was made special assistantfinance.

David Ferguson was appointed controller, Copperweld Steel Co., Pittsburgh.

Herbert E. Markley was elected a vice president of Timken Roller Bearing Co., Canton, Ohio. He will be responsible for all foreign operations. Formerly assistant to the president, he is succeeded by Richard L. Frederick, who has been director of industrial relations.

Robert F. Gladfelter was elected president, Detroit Power Screwdriver Co., Detroit, subsidiary of Link-Belt Co. He succeeds Roy W. Bailey, retired. John M. Small was elected vice president and treasurer. He was plant superintendent.

Milo L. Phillips was elected vice president, Alloys & Chemicals Mfg. Co. Inc., Cleveland. He continues as sales and operations manager, and will direct technical policies.

Hillery G. Knecht was elected vice president-manufacturing and engineering, Stran-Steel Corp., Detroit, unit of National Steel Corp. C. H. Wheeler Ir., who headed the engineering division, has resigned.

Joseph A. Anderson, general manager, AC Spark Plug Div., Flint, Mich., was elected a vice president of General Motors Corp.

Dan T. Buist was elected vice president - marketing, Turco Products Inc., Los Angeles. He was director of sales. Archie K. Beard was made

general sales manager. Steward B. Van Dyne was named assistant to vice president-marketing.

Earl R. Skaggs was appointed executive vice president, Townsend Engineered Products Inc., Santa Ana, Calif., subsidiary of Townsend Co. He is responsible as general sales manager for engineering, administration and manufacturing at the Santa Ana plant.

John D. Hulser was made manager of marketing for Trion Inc., Mc-Kees Rocks, Pa.

Robert J. Higley was named vice president-planning, Hupp Aviation Co., subsidiary of Hupp Corp., Chicago. He was controller. His new duties include production planning, procurement, material control, and use of electronic computer and data processing equipment.

George T. Brent was made chief engineer; Bruce W. Kinney, quality control supervisor, for Circuit Instruments Inc., St. Petersburg, Fla.,



HERBERT E. MARKLEY



RICHARD L. FREDERICK

Timken Roller Bearing executives



DAN T. BUIST



ARCHIE K. BEARD

Turco Products executive promotions



HERE'S PROOF of the lubricating ability of Houghto-Safe 620, Houghton's water-base fire-resistant hydraulic fluid. These rings and vanes, removed from the pump, show only negligible wear after more than 3 years of service.

The Houghto-Safe fluid was operating in the combination hydraulic pump of a production die casting machine. Mineral oil previously used was replaced by the Houghto-Safe to eliminate danger of fires and to cut downtime involved in regular oil changes.

Length of service for the fluid was 40 months. Maintenance was limited only to regular water make-up—

about 1 quart per month—in the 160 gallon reservoir.

You see, above, what maintenance engineers found when they tore down the pump. The Houghto-Safe was in its original condition after 40 months of service and the appearance of the parts proves that Houghto-Safe 620 can be used even in applications where lubricity and corrosion protection are critical.

Write for our folder on Houghto-Safe 620 Fire-Resistant Hydraulic Fluid. The address: E. F. Houghton & Co., 303 West Lehigh Avenue, Philadelphia 33, Pa.

**HOUGHTO-SAFE 620** 

... a product of





LEWIS A. CURTIS



C. TAYLOR MARSHALL Package Machinery president Pittsburgh Coke & Chem. v. p. Midwestern Instruments v. p.



DR. WILLIAM H. DUERIG



DAVID S. ZAHNISER Levco v. p.-sales



RICHARD M. STAFF Eastern Rolling Mills post



C. W. OESTERLEIN Reynolds plant manager

subsidiary of International Resistance Co.

David S. Zahniser was made vice president-sales, Levco Corp., Pittsburgh, national distributor for the warehousing and fabricating divisions of Levinson Steel Co. He was general sales manager.

Richard M. Staff was appointed works manager of Eastern Rolling Mills Inc., New York. He was a project engineer at Curtiss-Wright Corp.

William T. Holmes was appointed sales manager, Lafayette Steel & Aluminum Corp., Chicago, subsidiary of Caspers Tin Plate Co.

William E. McFarlane was made Atlanta district manager, Hubbell Metals Inc. He was manager of the stainless steel department and is succeeded by John O'Fallon.

Joel S. Tompkins was named chief power engineer for Aluminum Co. of America, Pittsburgh.

C. W. Oesterlein was named manager of Reynolds Metals Co.'s foil printing plant at St. Louis. He was plant superintendent.

Russell Radom was named general manager-industrial sales of Lindsay Structure Div., recently acquired by International Steel Co., Evansville,

J. J. McGrann was named Los Angeles district manager of Timken Roller Bearing Co.'s steel and tube division. He replaces the late S. Robert Kallenbaugh.

Luria Bros. & Co. Inc. made Mervin H. Luria district manager, Pacific Coast area, with headquarters in Los Angeles.

John T. Thompson was appointed manager of the new distributor products division of Raytheon Mfg. Co., Waltham, Mass.

Glen F. Crist was made general superintendent, Clemco Aero Products Inc., Compton, Calif.

Lewis A. Curtis, former vice president-sales, Package Machinery Co., East Longmeadow, Mass., was elected president. Roger L. Putnam Jr. was elected executive vice president; I. Edwin Hanson, treasurer. Mr. Putnam was vice president-manufacturing. Mr. Hanson will continue as controller. Donald H. Dalbeck, president and treasurer for the last two years, has resigned.

C. Taylor Marshall, general manager, coke and iron division, was elected a vice president of Pittsburgh Coke & Chemical Co., Pittsburgh. As vice president-coke and iron division, Mr. Marshall is responsible for production, marketing, and sales of pig iron, ferromanganese, coke and coke byproducts, and for long range raw material planning.

Dr. William H. Duerig was elected vice president-research and engineering, Midwestern Instruments Inc., Tulsa, Okla. He was manager of the engineering research and development division of Electro-Mechanical Research Inc.

#### OBITUARIES...

John J. Inman, St. Louis district manager, American Lead & Zinc Co., died May 10.

Clarence L. Corban, 54, manager of coke production, Inland Steel Co., Chicago, died May 13.

M. O'Connell, 69, president, O'Connell Machinery Co. Inc., Buffalo, died May 10.

Dale Cox, 56, director of public relations for International Harvester Co., Chicago, died May 14.

John T. Dillon, 74, chairman, Struthers Wells Corp., Titusville, Pa., died May 12.

Frank B. Sanborn, 93, founder and chairman, Sanborn Co., Waltham, Mass., died May 16.

Robert J. Casterton, 42, sales manager, New York district, Spang-Chalfant Div., National Supply Co., died May 14.

Alexander S. Keller, 53, vice president-general sales manager, Pratt & Whitney Div., West Hartford. Conn., United Aircraft Corp., died May 17.



# The steel bar that has high strength WITHOUT HEAT TREATING

Yes, La Salle invites you to test a sample bar of the remarkable new FATIGUE-PROOF. This amazing new material is its own best recommendation... as proven by the many original equipment manufacturers who have already tested (and are using) FATIGUE-PROOF.

If you are making parts requiring strengths in the tensile range of 140,000 to 150,000 psi, and want to eliminate the expense or problems of heat treating... if you want to save production costs with a bar that machines faster (25% faster than annealed alloys—50% to 100% faster than heat treated alloys) and gives you a beautiful finish, too... if you want to improve the quality of your product while saving money, send us a blueprint, drop us a note giving application details, or better yet... pick up your telephone and call a La Salle sales engineer (REgent 4.7800, Chicago, Illinois).

# steel

#### FREE

Get your copy of "a new material," a 24-page booklet which gives detailed information on La Salle "FATIGUE-PROOF" steel bars.



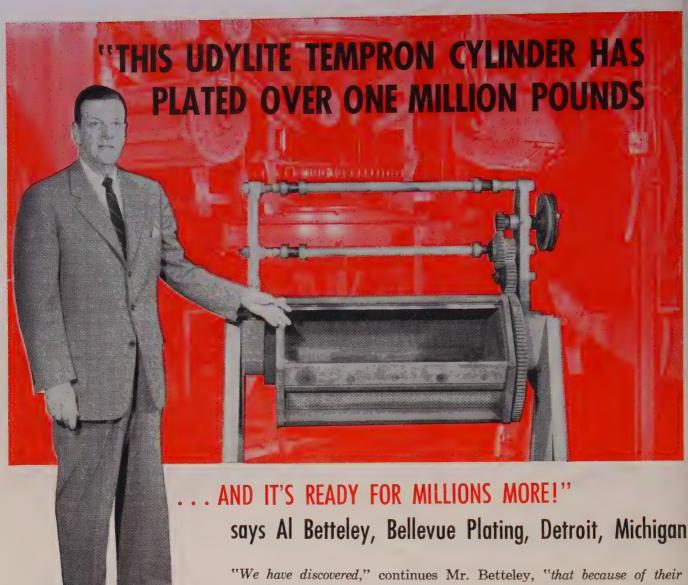
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Manufacturers of America's Most Complete

Please send me your "FATIGUE-PROOF" Bulletin.

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Line of Quality Cold-Finished Steel Bars



"We have discovered," continues Mr. Betteley, "that because of their rugged construction and amazing heat and abrasion qualities, these plating cylinders are the most economical and desirable we have ever used. We process up to 200 pounds of work in 14" x 30" cylinders at temperatures up to 212°F. with no damage or softening. Then, contrasting this, we immediately rinse them in cold water. Their ability to withstand these terrific temperature variances allows for greater production and the unique design makes maintenance a very simple task. In short, we're satisfied with Udylite Tempron cylinders. They give us more for our money!"

Like so many other platers, Bellevue Plating has discovered the advantages Udylite Tempron construction has to offer. If you desire full production with a minimum of maintenance, you'd better make the discovery, too. Your local Udylite representative has the full story of how they can benefit you and your plating operation. Call him today, or write direct to:



# Use of Oxygen in Steelmaking Soars

Mational average is now 200 cu ft of the gas for every ingot also produced. Linde will build huge plant and pipeline to reserve four U.S. Steel plants on Monongahela River

LINDE CO., a division of Union Carbide Corp., New York, will build a huge oxygen plant to serve four of U. S. Steel Corp.'s plants on the Monongahela River, south of Pittsburgh.

The 1000 ton-per-day plant (equivalent of 730 million cu ft of 99.5 per cent pure oxygen per month) will be built at the Duquesne Works. Oxygen will be distributed by pipeline to the Edgar Thomson Works, Braddock, Pa.; Homestead Steel Works, Munhall, Pa.; and National Works of National Tube Div., McKeesport, Pa. Provision is made for future extension of the pipeline to Carrie Furnaces, Rankin, Pa.

Forecast Revised Upward — The new plant will replace Linde's oxygen capacity already installed at Homestead, Edgar Thomson, and National Works. Last June, at Duquesne, Linde put on stream a 500 ton-per-day plant. That capacity is not enough to handle predicted future requirements at these four steelworks.

The project is evidence of U. S. Steel's confidence in the expanding future of steel, and of the role of oxygen in its steelmaking processes. Use in steelmaking has climbed from about 30 cu ft per ton in 1930 to the present national average of 200 cu ft for every ingot ton produced.

Today, about half of a steel mill's usage is in steelmaking processes and half in such practices as scarfing, cutting, and scrap preparation.

In the not-too-distant future, metallurgical uses are expected to take and hold the lead, because in an increasing number of cases the use of oxygen has become a low-cost alternate to building additional furnace capacity to meet the nation's future demands for steel.

#### Plans \$3-Million Plant

National Cylinder Gas Div., Chemetron Corp., Chicago, is building a \$3-million liquid oxygen, nitrogen, and argon plant near Philadelphia. Capacity of the plant will be more than 65 tons of these gases a day and can be expanded as demand increases. Production of oxygen is scheduled to start early in 1959.

Oxygen to be used in the new H-iron process of iron powder production at a Conshohocken, Pa., plant being built by Alan Wood Steel Co. (Steel, Apr. 28, p. 83) will be supplied via a direct pipeline.

In addition, the NCG plant will increase supplies of high-purity oxygen, nitrogen, and argon for distribution to other east coast industries.

## Giddings & Lewis Expands

Giddings & Lewis Machine Tool Co., Fond du Lac, Wis., purchased the land and buildings of Prescott Co., Menominee, Mich. The purchase was aimed primarily at acquiring another gray iron foundry to supplement that Giddings & Lewis has at Kaukauna, Wis. The rest of the plant, including facilities for making sawmill machinery and diesel engines, plus a contract machine shop, will continue to be operated by the Prescott firm under a lease arrangement with Giddings & Lewis. Prescott Co. remains an independent company.

#### Streamlines Production

Alco Products Inc., Schenectady, N. Y., has completed the first phase of a \$4-million modernization program to streamline production and integrate plant facilities into a smaller area. Three production buildings have been extensively renovated and a fourth has been converted to house seven laboratories (nuclear power, radiochemistry, heat transfer, welding, instrumentation, metallurgy, chemistry and mechanics).

Officials say the new plant is the only straight-line assembly setup of its type. A large portion of (Please turn to Page 88)



"Special" is our middle name! We make millions of odd-size brass and aluminum nuts for all types of equipment. Unique high-speed machinery turns all Fischer nuts to exacting specifications. Extreme uniformity, competitive prices and prompt delivery assure you of substantial savings in cost and time.

Next time you need "special" brass or aluminum nuts, contact Fischer for fast action . . . premium quality.

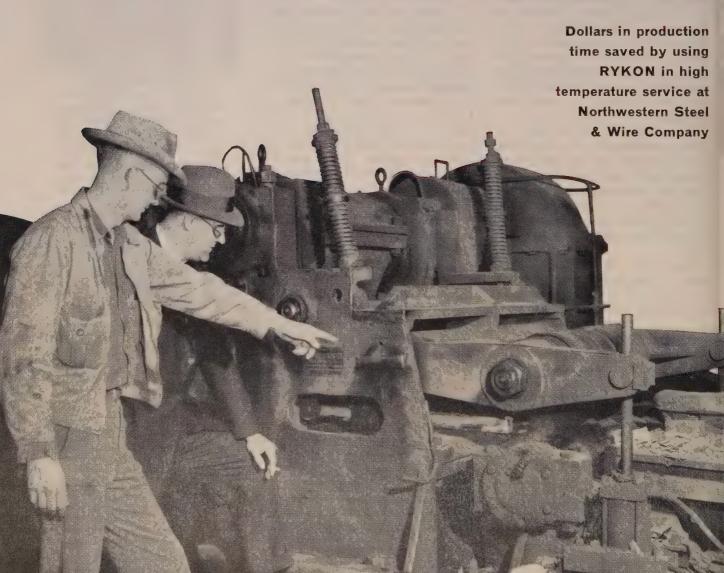


SPECIAL MFG. C	0.	12.5
FISCHER SPECIAL MF 476 Morgan St., Cincin Please send your ne CATALOG FS-1000 cor plete specifications on aluminum nuts.	nnati 6, 0 w 20-pag ntaining (	e Com-
Name		Title
Company		
Street		
City	Zone_	State

Shutdowns
for lubrication
cut in half
with

# RYKON

Grease



Bearings on the 46-inch blooming mill manipulator and side guard carrier had to be lubricated twice each eight-hour shift before Rykon Grease was used. The mill had to be shut down while the lubrication work was performed. Now with Rykon, the bearings are greased once each shift. Maintenance men find rollers and pins are still well lubricated. The rollers are subject to almost constant heat and water washing. Steel blooms heated to approximately 2300° F. are just 18 inches away from the Rykon lubricated bearings. The lubricating properties of the grease are unaffected by the heat.

RYKON Grease delivers similar performance results elsewhere in the plant. In roller bearings on the reheating furnace charging tables, in pinch roll bearings and in other trouble spots, where heat and continuous water washing would make short work of other greases, RYKON stands up to the test.

A unique nonsoap, organic thickening agent gives Rykon Grease the ability to provide lubrication in tough-to-lubricate spots long after other greases have failed. This thickener is the result of five years of research effort by a Standard Oil grease research team working to develop an outstanding industrial grease. Rykon Grease is a true multipurpose grease capable of performing all lubrication jobs on one piece of equipment or often in an entire plant.

More facts about RYKON Grease are available from the Standard Oil lubrication specialist that is near you in any of the 15 Midwest and Rocky Mountain states. Call him. Or write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

Bloom in the pinch roll. A 2300° F. bloom goes through while water washes continuously. RYKON Grease keeps this equipment lubricated at all times in spite of heat.

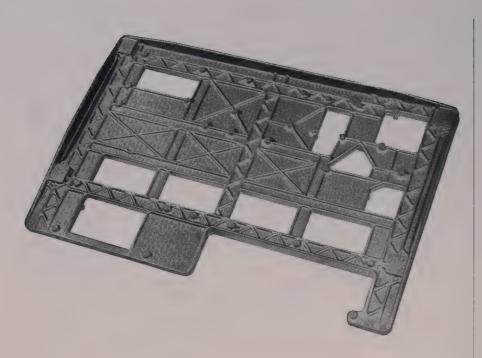
Stable at high temperatures.
 At sustained high temperatures RYKON Grease remains soft and grease-like.

Quick facts about RYKON Grease

- Resistant to water washing.
- Mechanically stable. Minimum change in consistency in service.
- Resistant to oxidation.
   Thickener acts as an inhibitor.
- Exceptional rust preventive properties.



Lubrication time cut. Mill feeder pinch roll bearings formerly lubricated twice each eight hours. Now with RYKON Grease lubrication is needed only once each shift. Elbert Dean, Northwestern Steel lubrication engineer, and Standard Oil lubrication specialist, Charles Daub, inspect bearings. Counseling people who have lubrication jobs like this is work for which Chuck Daub is well-qualified. Chuck has 12 years' experience in lubrication technical service work. He has an engineering degree from Illinois Institute of Technology and has completed the fifteen week Standard Oil Sales Engineering School course.



# EXCELLENT BASE FOR PROFITS

This ninety-six pound casting was made for the National Cash Register Co. of Nodulite®, Hamilton Foundry's ductile iron. The casting forms the base for the new Post-Tronic Accounting Machine. It measures  $37\frac{1}{2}$ " by  $23\frac{1}{2}$ " with sections varying from  $\frac{1}{4}$ " to  $1\frac{1}{2}$ ". Ductile iron was chosen for this part because of its ductility, dimensional stability, rigidity, and machinability.

Sharp pencil buyers know that the *ultimate* cost of a casting rather than the purchase price is most important to the cost of the end product. Dimensional accuracy, uniform machinability, fine surface finish, low rejects and delivery of orders on schedule result in castings at lowest ultimate cost and insure your reputation for product quality.

When new and unusual design problems arise in the selection of metal and the casting of parts, you will find that the skill and integrity of your foundry is your best insurance that specifications—and delivery schedules—will be met.

GRAY IRON . ALLOYED IRON . MEEHANITE (R) . DUCTILE (NODULAR) IRON . NI-RESIST . DUCTILE NI-RESIST . NI-HARD



# HAMILTON

The Hamilton Foundry & Machine Co., 1551 Lincoln Ave., Hamilton, Ohio • TW 5-7491

(Concluded from Page 85)
the project centered on building
No. 62 which was converted into a
progressive-station, multiline assembly operation.

#### Builds 10-in. Rod Mill

Sheffield Div., Armco Steel Corp., is constructing a 10-in. rod mill at its works in Kansas City, Mo., at a cost of \$10 million. The mill will have a speed of 6000 fpm on rods and a production rate of up to 90 tons an hour for bar products. Rust Engineering Co., general contractor, will co-ordinate the design and erect the mill building and will install all mill machinery, auxiliary equipment, and utilities. The reheating furnace for the new mill will be designed and installed by Rust Furnace Co. Electrical installation work will be handled by Allegheny Industrial Electrical Co. Inc. Both are subsidiaries of Rust Engineering.

## **Develops Industrial Park**

Unexcelled Chemical Corp., New York, has announced plans for the development of an industrial park on its 435-acre site in Cranbury, N. J.

## **Buy Canadian Company**

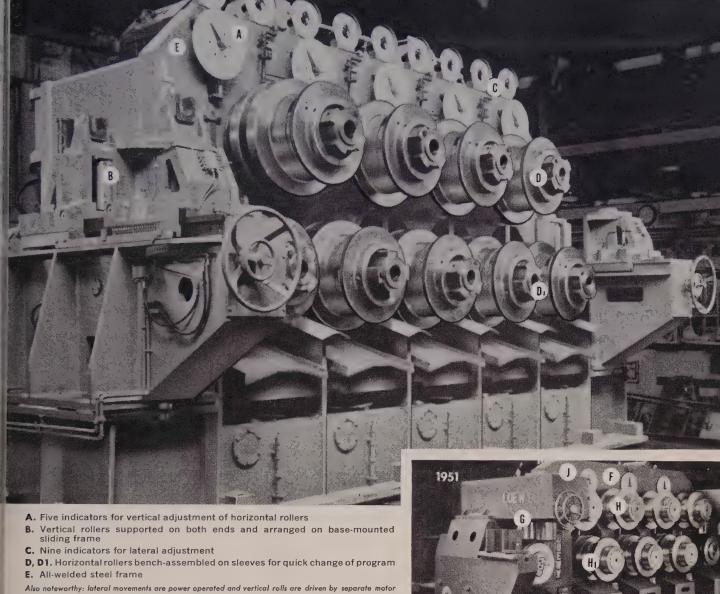
Mosler Safe Co., Hamilton, Ont., and J&J Taylor Ltd., Toronto, Ont., have purchased Dominion Safe & Vault Co. Ltd., Niagara Falls, Ont. A new firm, Mosler-Taylor Sales Ltd., has been formed to operate the new property.

## Plans Research Facility

Litton Industries, Beverly Hills, Calif., will build a \$1.5 million engineering and research facility at Culver City, Calif. It will be used for advanced research in electronic assemblies.

## Inco Expanding Mill

International Nickel Co. Inc., New York, is increasing the cold-drawing production capacity of its Huntington, W. Va., Works by about 50 per cent. A plant addition will house more equipment and facilities for production of seamless nickel alloy tubing, especially for extra-



- F. Three indicators for vertical adjustment of lower horizontal rollers
- G. Vertical rollers overhung and mounted on overhung bracket
- H, H1. Horizontal rollers directly mounted in roller shafts
- J. Cast steel frame

NOW!...

# Loewy roller-straighteners for structurals and rails feature one-pass straightening at 600 fpm

In 1951 Loewy-Hydropress designed and built America's first roller-straightener with overhung straightening rolls for heavy structurals and rails—the most important development ever made in the design of straightening machines. This one-manoperated Loewy-pioneered straightener beats the slow and cumbersome gag press, which depends entirely on the operator's skill. It outmodes the closed-type straightener, which is not nearly so accessible as the open-type Loewy, does not provide the horizontal adjustment for removing camber, and requires partial dismantling of the machine for every program change.

Now we offer a machine incorporating features that further improve on the original overhung model of 1951 (see photo-

graphs above). Among the advantages are greater maximum speed—up to 600 fpm—and decrease of time required for changing rolls. By providing sleeve-mounted rolls, their assembly may be accomplished away from the machine, and thus the change of rolls can today be effected with a minimum delay for different rolling programs. Roll adjustments are now remote-control power operated and provided with selsynactuated indicators which show the various adjustments in the operator's booth as well as on the machine. Our machines achieve better than commercial straightness in one pass.

For more information on Loewy roller-straighteners for structural steel or on any other rolling equipment, write Dept. B-5.

# Loewy-Hydropress Division

BALDWIN · LIMA · HAMILTON

111 FIFTH AVENUE, NEW YORK 3, N.Y. Rolling mills . Hydraulic machinery . Industrial engineering



# FOOTE BROS. Motorized Drives

# Outi-Rated GEARING

# Gives You More Power Per Dollar



# Outi-Rated GEARING

Makes the Difference!

Duti-Rated Gearing is the heart of Foote Bros. Motorized Drives ... drives that give you more load capacity and wear life per dollar. This is premium quality gearing-high hardness, accurate, balanced designthe product of thousands of engineering and development hours, precision tooling and manufacturing methods.





this trademark stands for the finest industrial gearing made



Better Power Transmission Through Better Gears

FOOTE BROS. GEAR AND MACHINE CORPORATION 4583 South Western Boulevard

Chicago 9, Illinois

long Monel tubing. New equipment will include a 150,000-lb draw bench, a 300-ft long gas-fired annealing furnace, and four overhead cranes. Provision will be made for high pressure and ultrasonic testing. Estimated cost: \$3.5 million.

## **Dayton Rubber To Build**

Dayton Rubber Co., Dayton, Ohio, plans to erect a 175,000 sq ft mechanical rubber goods manufacturing plant at Springfield, Mo-



#### CONSOLIDATIONS

Metal Forming Corp., Elkhart, Ind., merged with Vanadium-Alloys Steel Co., Latrobe, Pa., and will be operated under the same name as a division.

Lindsay Chemical Co., Chicago, merged into American Potash & Chemical Corp., Los Angeles, and will be operated as the Lindsay Chemical Div. Lindsay produces more than 60 chemicals, thorium, yttrium, and rare earths.

Narda Ultrasonics Corp., Mineola, N. Y., acquired Alcar Instruments Inc., Little Ferry, N. J. Alcar specializes in ultrasonic research and development, and is a supplier of custom-built systems and highpowered ultrasonic equipment and special devices to industry and government. Alcar will be operated as a subsidiary under the presidency of Benson Carlin.

A. V. Roe Canada Ltd., Toronto, Ont., bought two companies which will be merged and operated as Canadian Car (Pacific) Ltd., a division of Canadian Car Co., Montreal, Que., a Roe subsidiary. The west coast firms are: Vivian Diesels & Munitions Ltd. and Vivian Engine Works Ltd., Vancouver, B. C.

Dayton Steel Foundry Co., Dayton, Ohio, acquired Sterkel Tandem V-Belt Drive Mfg. Co., Denver. The property will be operated as Dayton Tandem V-Belt Drive Co.

Sta-Rite Products Inc., Delavan, Wis., acquired Perfection Mfg. Corp., Belvidere, Ill., producer of dairy equipment and pumps. Sta-



# WELDMENT SERVICE

Subcontract this part of your production profitably ...confidently

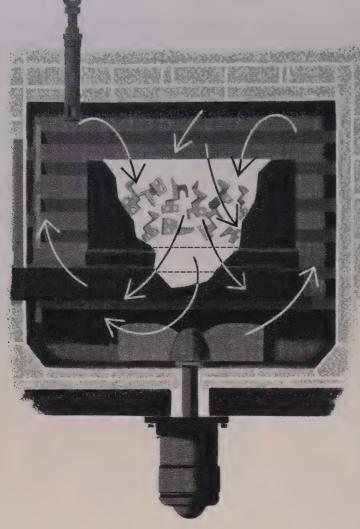
Now you can employ the nationally known facilities, experience and craftsmanship of The Morgan Engineering Company to produce components for *your* products. Whether you require quantities of small precision weldments or parts weighing up to 80 tons, you can subcontract this part of your production profitably . . . confidently.

Facilities include a complete line of positioning and automatic welding equipment . . . a 20 x 18 x 52 foot stress-relieving furnace . . . modern shot blast equipment and a wide range of machine shop facilities.

Inspection of the Morgan plant is welcomed. Write, wire or phone for complete data on facilities . . . or ask a Morgan sales engineer to call.



Overhead electric traveling cranes, gantry cranes, open hearth special cranes, plate mills, blooming mills, structural mills, shears, saws and auxiliary equipment.



# it's new!

This precision furnace is the most versatile in the history of heat treating. It can be used interchangeably for controlled case carburizing, carbonitriding, homogeneous carburizing, carbon restoration, or hardening.

The unique combination of Microcarb atmosphere control, Speedomax® temperature control and the controlled quench, makes possible significant quality improvements in production heat treating. New, efficient, L-O voltage radiant tube heaters are rugged, requiring minimum maintenance—are not subject to failures from carbon deposits when the furnace is used for carbonitriding without Microcarb control.

In many instances the Tricarb method has proved a practical solution to lower production costs...higher quality... more process automation...elimination of rejects and spoilage. In others it makes thoroughly practical the handling of many previously impossible or difficult heat treatments on a reproducible, production basis.

Folder T-620(17) explains the Tricarb Method. Write us at 4957 Stenton Ave., Phila. 44, Pa.

# The L&N Tricarb method with controlled atmosphere... temperature... quench





When small cams for electrical instruments are carburized in this Tricarb furnace, 6¢ per piece is saved on subsequent buffing operations because work comes from the furnace so clean.

Rite will operate the property as a subsidiary and will build a 64,000 sq ft pump manufacturing plant at Delayan.



# **VACATIONS**

Waldes Kohinoor Inc., Long Island City, N. Y., will be closed from July 21 to Aug. 1, inclusive. The firm's sales, order, and shipping departments will function on a limited basis during the vacation period. The firm makes retaining rings, grooving tools, and other products.



## **ASSOCIATIONS**

Copper & Brass Research Association, New York, elected these officers: President, J. M. Kennedy, Revere Copper & Brass Inc., New York; senior vice president, D. W. Blend, Wolverine Tube Div., Calumet & Hecla Inc., Detroit. Vice presidents are: Justice Lockwood, American Brass Co., Waterbury, Conn.; Allen R. Roach, Penn Brass & Copper Co., Erie, Pa.; F. R. Slagle, Miller Co., Meriden, Conn.; F. W. Sullivan, United Wire & Supply Corp., Providence, R. I.; J. E. Williams, Western Brass Mills Div., Olin Mathieson Chemical Corp., New Haven, Conn.; G. P. Bakken, Chase Brass & Copper Co. Inc., Waterbury; C. P. Goss, Scovill Mfg. Co., Waterbury. F. L. Riggen Sr., Mueller Brass Co., Port Huron, Mich., was re-elected treasurer; T. E. Veltfort, managing director; and Carl H. Pihl, secretary.

American Tin Trade Association, New York, elected these officers: President, J. J. Jennings, National Lead Co., New York; treasurer, Heinrich Meyer, Ayrton Metal & Ore Corp., New York; and vice president, Elmer E. Stewart.

Metal Roof Deck Technical Institute, Chicago, elected these officers: President, B. W. Blake, Macomber Inc., Canton, Ohio; first vice president, N. P. Travers, Wheeling Corrugating Co., Wheeling, W. Va.; second vice president, S. M. Burke, Granco Steel Products (Please turn to Page 96)



Cost reduction, achieved through the use of Edgewater steel rings, is due to savings in machining time and reduced scrap loss. Edgewater rolled rings are formed to tolerances so close that a minimum of machining is required. Weldless rings are rolled from solid steel blocks by a process which produces a wide variety of cross-section shapes. Diameters are from 5 to 145 inches.



WRITE for bulletin describing Edgewater Rings.

# Edgewater Steel Company P.O. Box 478 • Pittsburgh 30, Penna.



May 26, 1958



Now, you can reserve steel mill output in advance of actual purchasing. You need never pay for carrying more than a minimum inventory of steel. Yet your supply is assured in peak demand periods!

# try this new approach to your steel inventory problems

Here's Carpenter's answer to steel inventory problems you face in both high and low demand periods. Now, because you can reserve mill capacity in advance, there's no longer any need to protect your steel supply in high demand periods by placing excessively large orders.

Even though your needs may rise sharply, Carpenter's new plan assures you all the steel you need. We'll earmark extralarge stocks of semi-finished steel for your emergencies. And if you order steel out of local warehouse stocks, this same plan assures continuous, dependable deliveries.

In low demand periods, your own inventory is never more than the minimum required to match your rate of production. Cash ordinarily tied up in bigger inventories is free at a most advantageous time. And inventory upkeep costs are low.

Increased capacity at Carpenter makes this new plan possible. Through the acquisition of electric furnace steelmaking facilities in New England, Carpenter has virtually doubled previous capacity.

Today, while we're implementing this new service, is the time to go along with us. By acting now, you assure yourself of a steady supply of Carpenter top quality Tool, Stainless and Alloy steels right through the next period of peak demand. Moreover, we can offer this plan to *more* steel users than we've ever served before!

WRITE TODAY FOR "Can We Halt the Plague of Periodic Inventory Buildup?" Recently released, this special report gives you full details on how Carpenter's plan can help you keep inventory costs at a minimum!



The Carpenter Steel Company, Main Office and Mills, Reading, Pa.

Alloy Tube Division, Union, N. J.

Carpenter Steel of New England, Inc., Bridgeport, Conn.

Webb Wire Division, New Brunswick, N. J.



bright new
wire
with a
brighter
tighter
finish

**SO BRIGHT**—Use *Brytite* wherever a shinier, brighter zinc coating is desired for long lasting, more sparkling product appearance. Eliminate polishing and special finishing operations

so tight—Brytite has remarkable forming qualities. The zinc coating is so tight it will withstand severe deformation of the base metal without flaking, powdering or peeling.

so clean and smooth—Satin smooth in looks and feel, BRYTITE immediately raises the quality appeal of your product. You get smoother production, too—the result of precise uniformity and quality controls.

ROUND AND SPECIAL SHAPES

-Brytite is available in many sizes in round wire, and may on inquiry, be furnished in standard and special shapes—flat, halfround, oval, half-oval, square, rectangular, and many others.

PATENTED GALVANIZING PROCESS (R)

#### TEMPERS AND ANALYSES-

Specify BRYTITE in various tempers and analyses in the low carbon and medium low carbon steels.

FINISHES—Satin Finish, Unwiped (where a heavy weight of zinc coating is required) and Redrawn, in certain sizes.

no polishing...no buffing...no finishing...







withstands difficult forming operations

# CONTINENTAL STEEL

CORPORATION · KOKOMO, INDIANA

PRODUCERS OF Manufacturer's Wire in many sizes, tempers and finishes, including Galvanized, KOKOTE, BRYTITE, Flame-Sealed, Coppered, Tinned, Annealed, Liquor Finished, Bright, and special shaped wire. Also Welded Wire Reinforcing Fabric, Nails, Continental Chain Link Fence and other products.

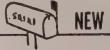
(Concluded from Page 93)

Co., St. Louis; permanent secretary and managing director, J. T. W. Babcock.

T. J. Hull has assumed his duties as executive secretary, National Association of Corrosion Engineers, Houston. R. W. Huff Jr. is now assistant executive secretary.

National Wholesale Hardware Association, Philadelphia, named Thomas A. Fernley Jr., managing director to succeed George A. Fernley, resigned. R. Bruce Wall was named secretary.

Douglas Hewitt of St. Paul has been appointed executive secretary of the Farm Equipment Institute, Chicago.



## NEW ADDRESSES

Lithium Corp. of America Inc., Minneapolis, moved its product research and development department into new and larger quarters at its chemical plant in that city.

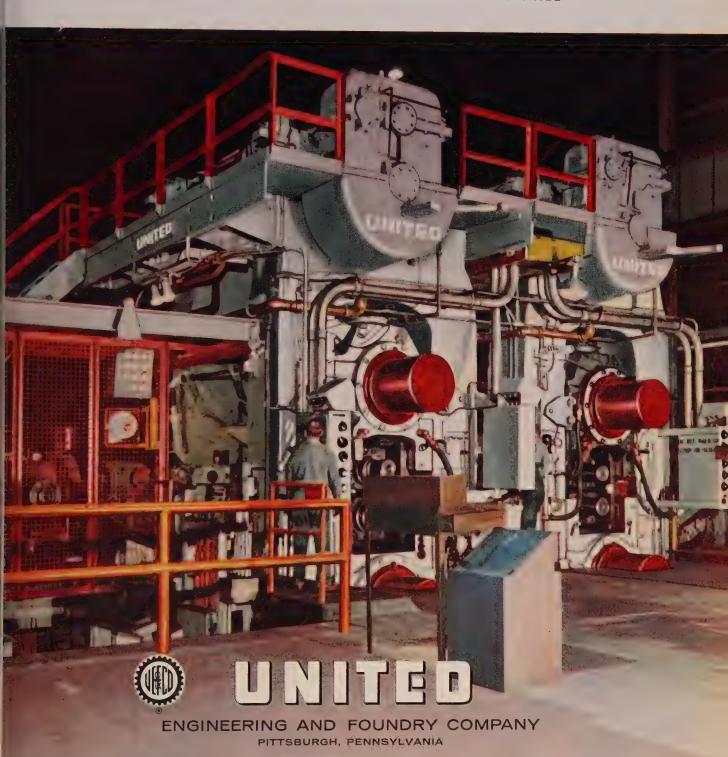
ACF Industries Inc. moved its executive offices to 750 Third Ave., New York 17, N. Y. Offices of its Advanced Products, American Car & Foundry, and Shippers' Car Line divisions also are at the new address.

Supreme Products Corp., Chicago, has moved into a new factory and office building adjoining its old plant at 2222 S. Calumet Ave., Chicago 16, Ill. It provides an additional 43,000 sq ft of working space. Supreme, a maker of drill chucks, power screw drivers, and other power tool attachments, is a subsidiary of A-S-R Products Corp.

Ling Electronics Inc. moved into its new offices and manufacturing plant at Culver City, Calif. The plant covers 38,400 sq ft of floor space and cost more than \$400,000. The firm makes electronically driven systems for random, complex, and sine wave vibration testing; sonar equipment; low frequency transmitters; ultrasonic generators; amplifiers; variable frequency power supplies; and numerous other electronic instruments.

# 

4-HIGH 2-STAND TANDEM TEMPER PASS MILL



Plants at Pittsburgh, Vandergrift, Youngstown,
Canton, Wilmington
SUBSIDIARIES: Adamson United Company, Akron, Ohio
Stedman Foundry and Machine Co., Inc., Aurora, Indiana

Designer and Builders of Ferrous and Nonferrous Rolling Mills, Mill Rolls, Auxiliary Mill and Processing Equipment, Presses and other heavy machinery. Manufacturers of Iron, Nodular Iron and Steel Castings and Weldments.



# Crane control so exact you can polish your car

Polishing a \$5,000 Mercedes-Benz with a cloth on a crane hook takes perfect control. Foolish idea? Not really. Your products and equipment are worth far more than a quality car. Whatever you lift, total control is better with a "Shaw-Box" crane.

Exact control of all crane operations is engineered into every "Shaw-Box" crane. For instance, bridge end trucks have enclosed gearing to keep grease off the runway, to prevent whipping and skewing. Wheel traction is uniform, starts and stops fully controlled.

Shaw-Box builds cranes to your requirements, to AISE specs, and standard models; to lift 1 ton or 500; for stand-by, intermittent or continuous duty. Every one with absolute control of travel, traverse, lifting and lowering.

Ask one of our engineers to call for a discussion of your crane needs and how Shaw-Box can satisfy them on every count.



Shaw-Box builds all types of cranes. Many construction and operational advantages now accepted as standard were introduced by Shaw-Box.





# "Shaw Box" CRANES

#### MANNING, MAXWELL & MOORE, INC.

SHAW-BOX CRANE & HOIST DIVISION

384 W. Broadway • Muskegon, Michigan

Builders of "SHAW-BOX" and LOAD LIFTER' Cranes, 'BUDGIT' and 'LOAD LIFTER' Hoists and other lifting specialties. Other Divisions produce 'ASHCROFT' Gauges 'HANCOCK' Valves, 'CONSOLIDATED' Safety and Relief Valves, and 'AMERICAN' and 'AMERICAN-MICROSEN' Industrial Instruments.

In Canada: Manning, Maxwell & Moore of Canada, Ltd., Galt, Ontario



# Technical

# Outlook

May 26, 1958

**NEW ALUMINUM CASTING ALLOY**— Visitors at last week's foundry show in Cleveland got a look at Alcoa's new aluminum magnesium alloy, X250-T4. It's said to be an improvement over the 220-T4, which it replaces. Advantages: Good strength and ductility; excellent resistance to industrial and marine atmospheres; high resistance to stress corrosion; and it retains ductility during natural aging.

5-MINUTE OXYGEN ANALYSIS—The oxygen content of a metal sample can be determined in 5 minutes with simplified apparatus designed by Laboratory Equipment Corp., St. Joseph, Mo. It is also adaptable to carbon, sulfur, hydrogen, moisture, and ash (in coal) determinations. The instrument is sensitive to 0.0002 per cent oxygen. The company also makes a hot metal sampler which prevents air contact with the specimen.

**TOWARD BETTER PLATING**—Add a little ammonium chloride to the hydrochloric solution you're using to remove metal oxides before plating. It improves the resistance of metals to posttreatment oxidation, claims a British source. For best results, keep the bath temperature above 125° F.

CHEAPER PLATINUM PLATE— A process which produces a pore-free platinum electroplate without removing the part from the bath for burnishing is said to have distinct cost advantages over previous techniques. The plated surface is fine grained and gray in color. It's useful for high temperature corrosion resistance. Sel-Rex Corp., Nutley, N. J., developed the process, called Platinex III/LS.

You'll soon be able to get stainless strip heat treated or annealed continuously in a novel vacuum furnace designed by engineers at Wallingford Steel Co., Wallingford, Conn. Quality should be higher since the method eliminates the edge and handling effects of batch type processing. The

furnace (now under construction) will be able to handle stainless, titanium, or Hastelloy strips up to about 27 in, wide.

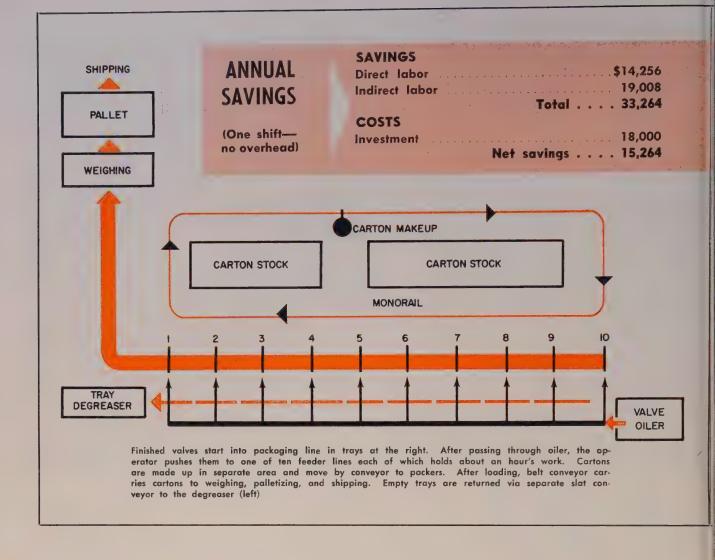
**TWO MICROINCHES RMS**—High alloy steel bearings get that kind of a finish in one standard barrel finishing machine containing Cor-A-Brite, says Roto-Finish Co., Kalamazoo, Mich. Tests show that the better the steel, the better the finish. It takes about 10 hours to complete a 350-lb load.

**DUCTILE MOLYBDENUM**—It has outstanding strength properties at high temperatures, say its inventors, H. Gordon Poole of the Colorado School of Mines, and J. S. Nachtman, consulting engineer. Their process for reducing molybdenum sulfide with tin produces a high purity material which can be rolled, extruded, or formed by powder metallurgy techniques.

LITHIUM UPS HEAT RESISTANCE—The Air Research & Testing Committee, top level material group for the Aircraft Industries Association, is studying an aluminum-lithium alloy (Alcoa X2020) that is said to stay strong at around 400° F. It is lighter than conventional alloys, and its high modulus of elasticity adds to structural stiffness in 1600-mph aircraft.

**KILN BENEFICIATION—**Allis-Chalmers' grate-kiln process for beneficiating iron ore concentrates has shown enough promise in the laboratory to prompt the company to invest in a \$250,000 pilot plant. It will include a 13-ft long traveling grate furnace and an 18-ft rotary kiln.

**PROFILE ROLLING**—Strip metal, rolled to close tolerance shapes more typical of extrusions, has the potential for a bigger market. Makers of jet engines, torque converters, and steam turbines discovered its application to blade contours after cutlery makers had used it for years. Alloy steels, Haynes alloys, titanium, and zirconium can be intrinsically rolled by companies, such as the General Plate Div. of Metals & Controls Corp., Attleboro, Mass., which specialize in the technique.



COST CRISIS . . . How To Beat It

# New Layout Ups Output 10%

This firm's investment of \$18,000 paid for itself in about six months. In addition, it gained quality, safety, and better housekeeping. Supervisors have fewer headaches

THE VALVE Div. at Thompson Products Inc., Cleveland, had a problem: Its packing department was too small — workmen got in each other's way. A warehouse was rented to store packing materials. The indirect-direct labor ratio was too high.

Solution: A new layout in a larger

area that upped packaging output 10 per cent and cut indirect labor by 30 per cent.

Features — Two improvements account for most of the savings:

1. Packed cartons continue in a straight line from packing to weighing to shipping. (That replaces the old method of returning them

to the starting point by belt conveyor.) 2. Cartons are stapled and made up a short distance away and carried to the packers on an overhead conveyor.

Those changes give workmen more room and conform to a cardinal rule of plant layout: Straight line movement. Other benefits: Widem aisles, which simplify housekeeping and permit the use of powered lift trucks, and improved safety. Cartons don't have to be lifted from the time they're packed until ready for shipment.

Operation — Trays of finished valves are stored in racks at the start of the packing line. Trays pass through an oiler, then roll along a conveyor to one of ten packing lines. Each holds about an hour's work.

The packers take the oiled valves from the trays, wrap them, and pack them in cartons.

Empty trays roll down to a slat conveyor which takes them to the degreaser. Full cartons slide to a belt conveyor which ends up in the shipping department.

Principles-Plant and process layouts offer great opportunity for savings. G. H. Meyfarth Jr., vice president, May-Fran Engineering Inc., Cleveland, estimates that 70 to 80 per cent of industrial activity is material handling. "A large part of the savings at the new Twinsburg, Ohio, plant of the Chrysler Corp. came from an efficient layout." An integrated scrap handling layout alone saved 30 per cent, he claims. Scrap is cut and baled to get a higher scrap price. The system is so good that large pieces like window blanks from doors are no longer saved—it's cheaper to scrap them.

Henry Spitzhoff of Robert Heller & Associates, Cleveland, is upset when industrialists fail to plan farther than one or two years. Too often, their layouts have to be done over again. His advice: Plan for at least five years. Even if your crystal ball is a little cloudy, look at it, he says. Other suggestions: Don't spend too much time on minor considerations. Consider how it might be done better. Integrate process design with product design.

Responsibility—Such changes are the specialty of industrial and process engineers. They must analyze operations, transportation, inspection, delays, and storage. The process usually begins with a flow chart, then the checking of jigs and fixtures, and tool arrangements. They try to couple as many machines as possible.

A good plant layout keeps costs low, steadies regular production, improves supervision and quality, and increases the number of people a supervisor can handle. Proper layout also cuts capital investment.

One engineer calls models indispensable. "Block or line layouts are useful, but they can't give you as many answers as scale models."



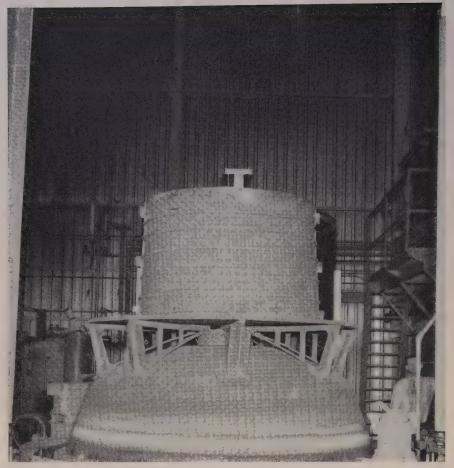
This is Atmos—the perpetual motion clock which derives its energy from changes in atmospheric temperature.

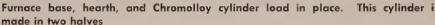


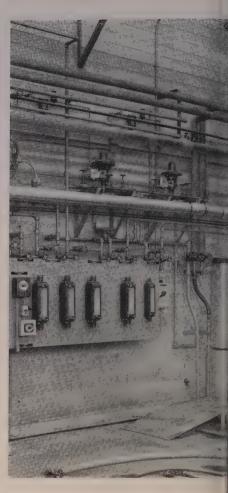
Ten clocks suitably inscribed, will be awarded to winners in Steel's Cost Crisis Competition, two in each of five employment groups.

The accompanying article is an example of what the editors are looking for in their search for companies that have made important cost savings through more efficient use of capital equipment. Does your company qualify? If so, enter the competition—no later than June 15, 1958. Write to the Cost Crisis Editor, Steel, Penton Bldg., Cleveland 13, Ohio, for your awards kit.

May 26, 1958







# Heating Technique Minimizes Distortion

Process for hardening large gas turbine parts of Chromolloy steel includes heating in an atmosphere furnace, quenching in liquid carbon dioxide, and proper fixturing

HERE are typical requirements for new designs of large Chromalloy parts such as jet engine components: Quench a thin walled cylinder 4 ft in diameter by 4 ft high from 1725 to 1000° F within 3 minutes. No distortion or significant change in carbon content can be tolerated.

Chromalloy is a chrome-molybdenum-vanadium steel used for medium-high temperature applications in aircraft gas turbines. It is subject to severe decarburization and must be heated in atmosphere neutral to its carbon content.

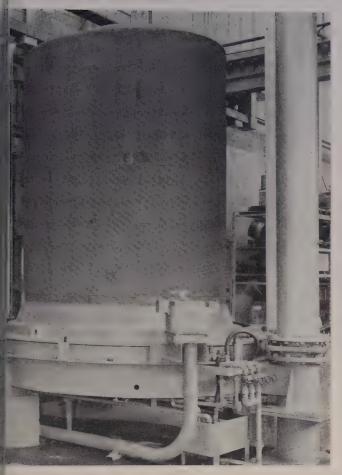
Heat Treatment—For hardening, the part is heated in a protective atmosphere to 1725° F and held for 1 hour and quenched as described above.

Cooling is continued down to 300° F, and the part is allowed to equalize in the furnace. Then it is tempered by heating to 1200° F and holding at that level a minimum of 2 hours. After that, it is cooled to room temperature and removed from the furnace.

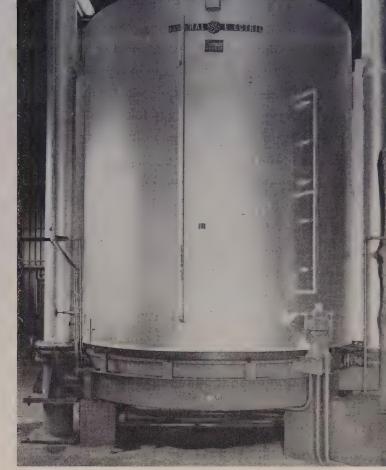
Furnaces—Small parts are hardened and tempered in conventional roller hearth furnaces. Rapidquenching is done in a forced circulation atmosphere chamber which is part of the furnace. The chamber is water jacketed and has a farto circulate the protective atmosphere and promote fast cooling.

In balancing production requires ments against the size of heat treathing equipment, it has been practical to treat parts up to a maximum of 3 ft in diameter and  $2\frac{1}{2}$  fligh with conventional roller hearthfurnace equipment.

Large Parts — A problem arose when designers called for cylindrical parts up to 4 ft in diameter and 4 ft high. The cylinders are fabricated from material ½ to ¼ in



Furnace base and retort ready to receive heating bell



Bell has been placed over retort and is ready for heating

By R. E. WRIGHT

and

C. SCHULENBERG

General Electric Co.

thick and have weldments on cylinder walls in several locations.

Flanges are attached at each end of the cylinder. Distortion and warpage must be kept at a minimum in the hardening and tempering treatments and the drastic quench.

The problem broke down into two parts. The first: What quenching means could best be used to reduce part temperature from 1725 to 1000° F within 3 minutes but avoid excessive distortion. The second: What type equipment would best handle this part for the heat treating cycle.

Quench—Liquid carbon dioxide was chosen as a quenching material. It is stored under pressure in a 6-ton tank and piped directly to the furnace. An air-actuated valve with a timing device permits sufficient liquid carbon dioxide to vaporize as it enters the furnace.

The decarburizing effect of carbon dioxide on the surface of the heat treated parts is not significant.

Furnace—A bell type furnace was selected. It consists of a stationary base on which the workload is placed, a retort which is placed over the load and rests on the base, and the furnace which is like a cylinder with an open bottom.

The furnace bell and retort are lifted with a hoist and placed over the workload. A standby base near the working base is used to hold the hot furnace bell when it is removed for the quenching portion of the cycle. The maximum operating temperature of the furnace is 2000° F.

The output gas is about 20 per cent carbon monoxide, 38 per cent hydrogen, 0.5 per cent methane, and 41.5 per cent nitrogen. The dew point of that analysis can be as low as  $-10^{\circ}$  F.

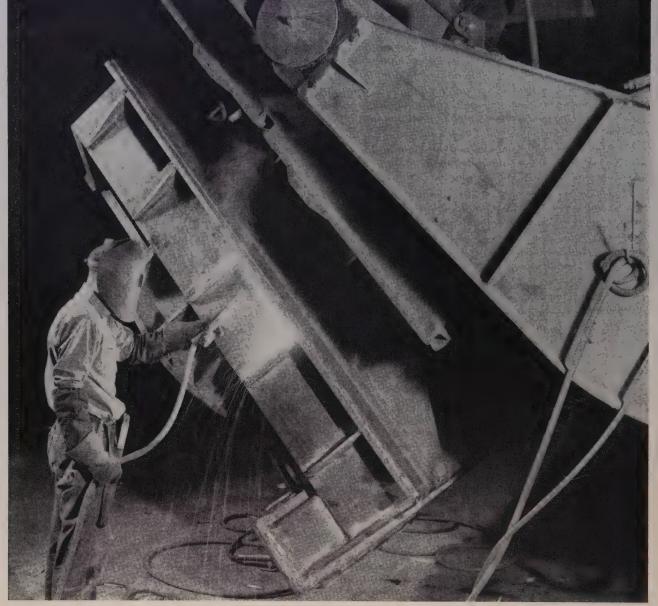
Fixturing—With the combination of the bell type furnace, endothermic gas atmosphere, and carbon dioxide quench, it is possible to hold large parts within close tolerances with the proper fixtures.

Fixtures are designed so they carry the weight of the part. To eliminate any retarding action in quenching caused by the mass of the fixture, no section of the fixture is of greater cross section than the part next to it.

The use of different fixtures and nozzles in the quench assures equal distribution of the quenching medium and minimizes distortion.

The success of the carbon dioxide quench out of an endothermic atmosphere is due to the speed of the quench and the hydrogen content of the atmosphere gas. The quench and tempering treatment make it possible to through-harden a piece 1 in. thick.

<sup>•</sup> An extra copy of this article is available until supply is exhausted. Write Editorial Service, Steel, Penton Bldg., Cleveland 13, Ohio.



Harnischfeger engineers claim a welder operator costs management up to \$20,000 a year. A positioner like this one can triple his output

# These Devices Turn 'Tilts'

Positioners cut welding costs by placing joints at the right angle for fastest welding. Coupled with manipulators, you can get greater mileage from automatic equipment

EIGHTY-SIX cents of the welding dollar goes for overhead and labor. It's the area of greatest opportunity for savings.

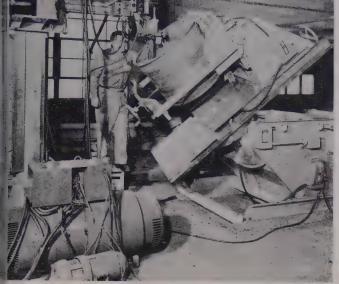
Manipulators and positioners attack such costs by greatly increas-

ing the time an operator spends welding. Positioners alone increase production output two or three times and improve the quality of a weld.

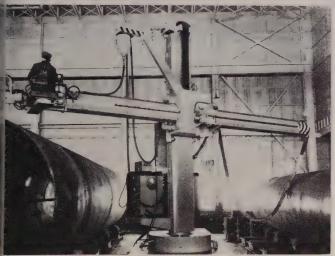
Significance — Engineers agree

that the fastest welding position is slightly downhill. Simply tilting a joint 10 per cent from the horizontal permits an operator to lay a bead faster than one done in the flat position. That's where positioners come in.

They are always used whenever it takes more than the welder to move a weldment, says Charles T. Aronson, president, Aronson Ma-



Source: Aronson Machine Co., Arcade, N. Y.
This setup combines a manipulator (left), and a tailstock on a positioner (right). Tailstock turns cylinder end for end; positioner rotates it for weld; manipulator moves welding head out of way

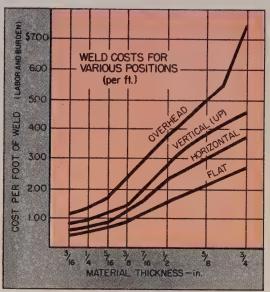


Source: Panjiris Weldment Co., St. Louis.

Track-mounted manipulator speeds production by welding alternate tanks. While one is being replaced, operator moves to the other. This setup holds both controls and power supply

#### Seven Advantages of Positioners

- Permits downhand welding.
- Increases production up to 50 per cent.
- Helps operators produce more uniform, stronger welds.
- Cuts labor costs up to 50 per cent.
- Cuts welding rod wastes 5 to 7 per cent.
- Cuts crane use and handling accidents.
- Permits increased use of automatic welders and manipulators.



Source: Worthington Corp., Harrison, N. J.

For maximum savings, get the weld in the best position you can. That's the foundation for savings from positioners. Chart compares welding costs of several standard positions

# into Dollars

chine Co., Arcade, N. Y.

Engineers at Harnischfeger Corp., Milwaukee, believe the only barrier to profitable use is whether you can get a weldment on a positioner. Their experience shows that some 80 per cent of their jobs can be positioned.

Case Histories—Benthall Machine Co., Suffolk, Va., makes farming machines. It had a space problem.

Production schedules were up, but there was no room and too little justification to expand.

The bottleneck was fabricating and welding heavy angle iron frames. It solved that situation with a positioner and tailstock. Cost: About \$1500. Results: Production increased 300 per cent; costs fell 50 per cent.

Allis-Chalmers Mfg. Co. Milwaukee, installed a 6000-lb positioner with a 3000-lb drive mounted on the faceplate. Production of crawler frames for tractors and motor graders was increased 100 per cent. Daily labor and burden savings came to \$87.50. Says Allis-Chalmers: "Positioners and downhand welding improved quality, proving

to us that such an investment is more than worthwhile."

Philosophy — Anthony K. Panjiris, president, Panjiris Weldment Co., St. Louis, has popularized the slogan, "Position all three — the man, the work, and the automatic head." Here is his formula. Analyze: 1. The operator. 2. The product. 3. Welding equipment. 4. Positioners. 5. Work deployment (material handling). 6. The welding method to be used.

Families — Positioners come in four categories: Hand, hand geared, powered, and miscellaneous types which include turning rolls and rotating floor tables.

Aronson has a hand controlled positioner that capitalizes on a

May 26, 1958

# Doubles as Fixture

Spider assembly like the one below is a natural for a positioner. Operator swivels the part for hub welds after finishing spokes (below, right). Dial (right) greatly speeds adjustments









weldment's center of gravity to provide balance. Since the tableshaft has a roller bearing, an operator needs only to push a little to move the weldment. It is limited to assemblies of reasonable size and weight.

Other hand positioners use a worm gear and gear trains for such adjustments.

Powered positioners are electrically driven, and controlled through hand or foot operated pushbuttons. (There is a wide variation of opinion about the safety features of each type of control.)

Sizes—The smallest ones fit easily on a bench and cost about \$200. The largest ones hold weldments weighing 500,000 lb. Cost: \$58,-000. Most makers agree that there's no particular limit on size. Larger ones are already on the drawing board or in the shop.

Manipulators—Except for special types, they consist of base, pedestal, and a boom or ram, which holds the automatic welding head.

There are two kinds of bases: Platform and track.

A manipulator is an extension of the positioning idea: The operator is replaced by an automatic machine.

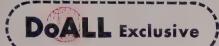
Combining the advantages of a positioner and a manipulator redoubles savings. They reduce the need for comparatively expensive special machines and greatly extend the usefulness of the automatic welding head.

What's Ahead—One of the latest developments is an automatic directional control for a manipulator. Made by Lewis Welding & Engineering, Bedford, Ohio, it seeks or hunts the center of a seam and eliminates the need for exceptionally accurate fitup or elaborate fixturing. It permits joining of curved, contoured, or irregularly shaped seams with an automatic welder.

Much automatic welding is still limited to straight seams. But experts predict that the day is not far off when tape or punched card controls linked with directional control will extend the automatic's range to cover many more hand welding fabrications.

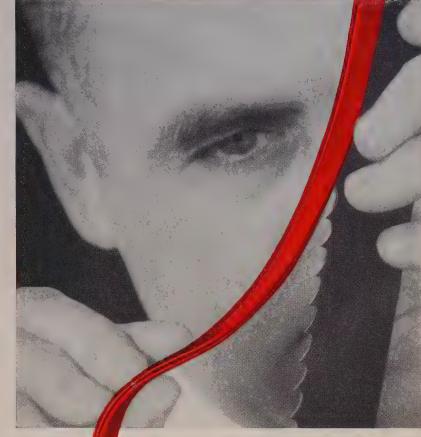
Last year, positioner and manipulator makers chalked up a record \$90 million in sales. The experts are predicting that the record won't last long.

<sup>•</sup> An extra copy of this article is available until supply is exhausted. Write Editorial Service, Steel, Penton Bldg., Cleveland 13, Ohio.



# New Cutting Edge Protection

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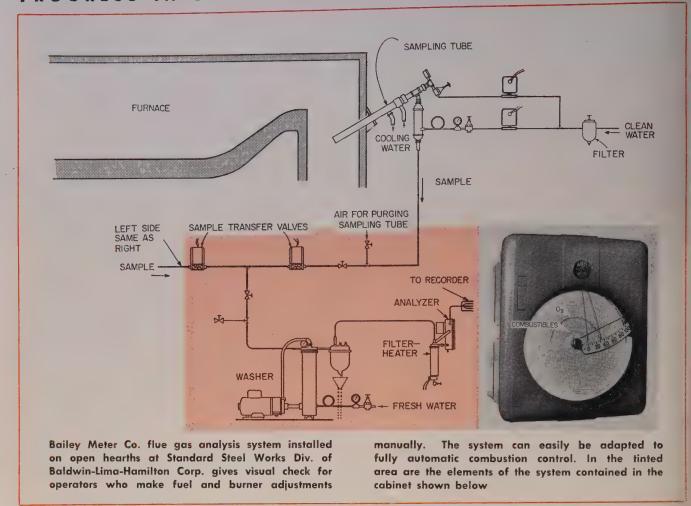
In this new era of production when band machining is replacing costlier practices in thousands of plants, the Demon Blade brings extra speed, extra earnings, extra production advantages. Indeed, here is cutting performance so remarkable that these high speed steel saw bands outlast carbon steel saw bands up to 30 times . . . give you ten times the cutting speed in cutoff and contour sawing.

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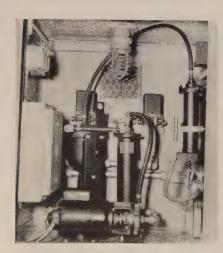
SB-61







# Analyze for Combustibles, Too



Most of combustion analysis equipment for a typical Bailey Meter system is housed in a refrigerator-size cabinet. The recorder can be mounted in the cabinet or remotely On the theory that oxygen analysis gives only half the picture of firing efficiency, an eastern steel producer is checking on unburned fuel as well

CONVERSION of five acid open hearths from oil to oil-natural gas firing offered a challenge to the Standard Steel Works Div. of Baldwin-Lima-Hamilton Corp., Burnham, Pa. None of its personnel had experience with natural gas firing.

The conversion was tried first on a 65-ton tilting furnace. Continuous analysis of combustion gases was added at the same time. It played a dual role in training operators and in giving engineers a fast check on the efficiency of the firing system.

Results: The changeover was completed without firing difficulties. Within a short period after light-off, the trial conversion was firing about 75 per cent natural gas and 25 per cent Bunker C oil—a ratio far better than had been expected. Closer supervision of furnace operation from a fuel-air ratio standpoint was realized.

Big Help-Part of the credit for



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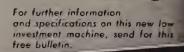
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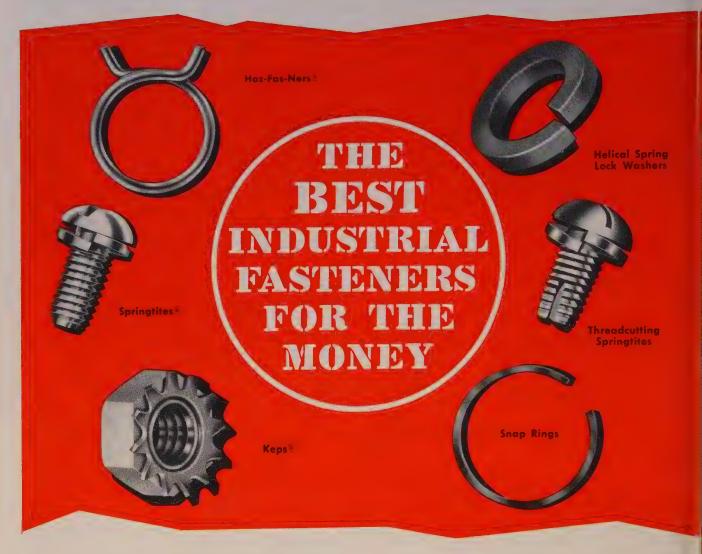


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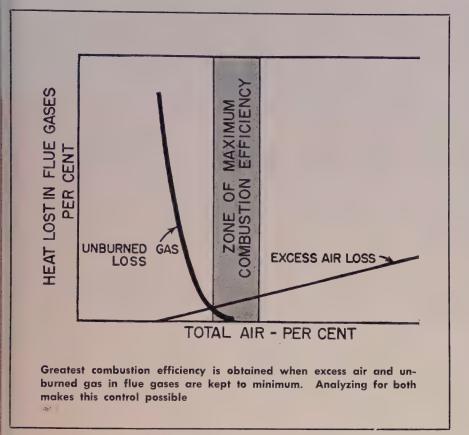
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success of the changeover goes to the gas analysis system. Here's how it helps:

- 1. It measures the percentage of oxygen in the flue gas, which indicates the excess air loss, regardless of the fuel burned.
- 2. It measures the percentage of combustibles in the flue gas, which is a check on the mixing efficiency of the burners by detecting unburned fuel.
- 3. It provides a continuous and permanent record, which, in addition, serves as an operator's guide.

Such systems are common on heat treating furnaces, powerplant boilers, rotary kilns, and glass tanks, but engineers at Standard Steel Works believe this is the first time that the analysis of oxygen and combustibles has been applied in combination to open hearths to help in firing a new fuel—at least in this country.

Simplified Equipment — Bailey Meter Co., Cleveland, which has been advocating such a system for open hearths, was called in to set it up. Bailey furnished this equipment:

1. Stainless steel water-washed and water-cooled sampling tubes (one for each flue) which will withstand gas temperatures of 3200° F. The water spray prevents plugging of the tube.

- 2. A pump and washer assembly to clean and cool the continuous gas sample.
- 3. An oxygen and combustibles recorder combined in a single instrument so both records appear on the same chart, giving the benefit of immediate comparison. The Bailey instrument also has space reserved for other functions, such as automatic control, which can be added at any time.
- 4. Pinch valves operating on furnace reversal, making it possible to use a common pump, washer, analyzer, and recorder for the two sampling tubes.
- 5. Air purging equipment to clean the sampling tubes periodically and simplify maintenance.

Money's Worth—The cost of the gas analysis instrumentation was under \$4600 per furnace.

The gas analysis system has been trouble-free from the start. Operators quickly mastered the technique of oil-gas firing with the help of the analyzer charts. Pleased with the results, Standard Steel Works is installing the same system on its four other open hearths.

# **Improved Tracer**

Cheap patterns guide this flame cutter. Phototransistor scans simple pencil drawing

CHEAPER flame cutting is said to be the aim of a new electronic control developed by National Cylinder Gas Div., Chemetron Corp., Chicago.

Based on a new optical sensing system, the unit steers metal cutting torches by scanning ordinary pen or pencil line drawings. It eliminates the need for costly templates. Some systems require more complex templates which are half black, half white.

Operation — Flame cutting machines can reproduce intricate patterns in plates or blocks of steel. They combine a 6000° F oxyacetylene flame and a high velocity jet of oxygen.

The tracing device accurately follows a 0.040-in. pencil line at any cutting speed. It turns 3/32-in. corners and crosses other lines. The system isn't sensitive to other lights—cutting can be done in any brightly lighted area.



ELECTRONIC EYE
. . . guides flame cutter accurately

Adapter—The scanner will fit older NCG models.

The line tracer uses a vibrator and phototransistor which is part of a closed-loop servosystem. It is tightly mounted to the tracing head.

NCG suggests that users cover often-used patterns with clear plastic to prevent tears, dark lines, or smudges.

# to twist a rocket's tail...

Kaiser Steel's Montebello Fabricating Plant uses A. O. Smith electrodes in fabricating 54-ton flame deflectors that tame the flame in rocket engine tests

When you test a rocket engine, there's literally "hell to pay" in terms of heat, thrust and distortion. To tame the rocket's flame, Kaiser Steel's Montebello plant builds water-cooled, 54-ton flame deflec-

tors. Consisting of 18 individual castings, each deflector requires over 5,000 lbs of electrodes.

Kaiser Steel is using A. O. Smith SW-15 (E-6013) and SW-44 (E-6024) electrodes for the job.

It's just one of many cases in which A. O. Smith can provide the answers to unusual as well as routine welding problems. For more details, contact *your* man from A. O. Smith or write direct.



Half-sections of 54-ton unit requiring over 5,000 lbs. of A. O. Smith electrodes.

The man from A. O. Smith

Jim McKinney is the A. O. Smith representative who worked with Kaiser Steel. More than a salesman, he's a welding specialist, ready and eager to help you with any of your welding problems.





WELDING PRODUCTS DIVISION

Milwaukee 1, Wisconsin

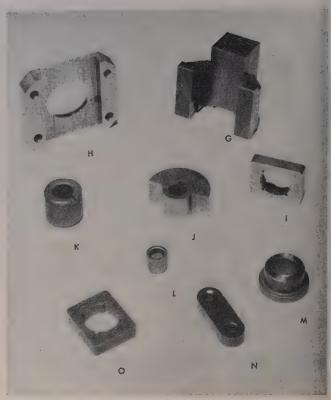
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Powder metallurgy parts in the bayonet saw: A—bearing retainer slide, high density iron; B—oil-impregnated blade holder saddle, iron alloy; C and D—upper and lower drive mechanism retainers, oil-impregnated bronze; E—drive block, oil-impregnated bronze; F—cover to retain blade holder, oil-impregnated bronze



Powder metallurgy parts for handsaw: G—blade holder saddle, iron alloy; H—oil-impregnated saddle retainer, bronze; I and O—drive block, oil-impregnated bronze; J—counterweight, copper-infiltrated iron; K, L, and M—oil-impregnated bronze bearings; N—link drive, steel alloy, case hardened and oil impregnated

# Powder Parts Add Sell to Tools

They enable manufacturer of home power tools to design unique operating features into two electric saws. Other benefits include reduced costs, close tolerances, self-lubrication

TO MEET competition in today's market, product designers must give the user better performance, features not available in competitive products, or both.

A leading maker of home power tools, Porter-Cable Machine Co., Syracuse, N. Y., turned to powder metallurgy parts in the design of its new hand and bayonet power saws to get unique movements and higher speeds.

In Orbit—The blades of both electric saws have orbital motions. A drive block which moves in a bearing slide retainer gives the

bayonet saw blade its motion. Both parts are made by powder metallurgy. Other methods were ruled out because of high costs and manufacturing difficulties.

The bearing retainer slide is pressed from high density iron. Porter-Cable grinds the slide to produce a sliding fit with the drive block, then case hardens it to a depth of 0.008 to 0.013 in. The drive block is compacted from bronze powder and impregnated with oil for lifetime lubrication.

Blade Holder—Vital to the orbital motion mechanism is the blade

holder saddle, which forms the bearing face for the blade holder. It is pressed and sintered from steel alloy powder, then steam treated to develop a black oxide finish. The part supports four needle bearings which in turn form the support for the blade holder.

The blade holder saddle has a counterbore 0.990 to 1.000 in. in diameter and 0.281 to 0.286 in. deep. Four holes (molded in by the fabricator) are reamed to size. An oil impregnated, bronze powder, blade holder cover is the outboard bearing support for the four needle bearings which were designed to guide the blade holder.

Oil-impregnated bronze powder parts are also used for the upper and lower drive mechanism retainers. They form bearing sur-

# Wean, "Youngstown" and Annealing...



The dynamic steel industry has spearheaded our industrial growth by a continuing interest in tomorrow's progress as well as today's product. The continuous strip annealing process is typical of this constant search for better products and improved methods of making them. Long recognized as a pioneer in the development of the continuous line process, it was only natural that Wean was one of the leaders in the development of continuous strip annealing.





CONTINUOUS SILICON
SHEET PRODUCTION

Shearwelder for coil build up line for 42" wide Silicon Steel from .015" to .030" thick.

# more automation for even faster Steel Production!

Metal Processing Machine Company's new Shear-welders are outstanding because of their advanced design incorporating automatically sequenced operations.

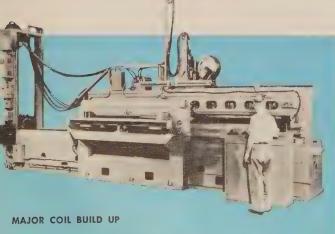
Shearing and welding are performed at the same station with positive clamping right at the work areas thereby insuring perfectly aligned butt welds.

"M.P.M." welds are extremely ductile, permitting subsequent rolling, forming, or blanking operations. Weld joints are smooth and require no trimming.

Rugged construction is insurance for minimum maintenance and compact design saves floor space.

#### THE METAL PROCESSING MACHINE CO.

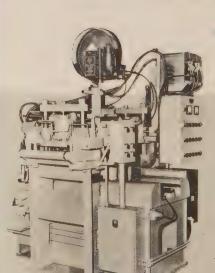
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Shearwelder for butt welding 60" wide x .250" thick

Stainless Steel.

Shearwelder for Carbon Steel coil build up line for .015" to .060" thick x 72" maximum width.





# CONTINUOUS TUBE

Shearwelder used with strip looping device for splicing coil to coil to permit continuous production of tube mill.

HEAVY GAUGE STAINLESS PRODUCTION

#### POWDER PARTS

faces and retainer plates for moving parts, providing lubrication and easy assembly.

Handsaw — A group of sliding parts generates the orbital blade action of the handsaw: A blade holder saddle slides in a retainer, and a drive block fits into the saddle.

Powder metallurgy methods were considered by Porter-Cable to be the best way to make the parts because close tolerances and self-lubrication were required. The saddle is a steam treated, oil impregnated iron alloy part. The saddle retainer and drive block are made of bronze powder and oil-impregnated.

Other Powder Parts—A copper infiltrated, iron powder counterweight is used to balance the motion-producing mechanism in the handsaw.

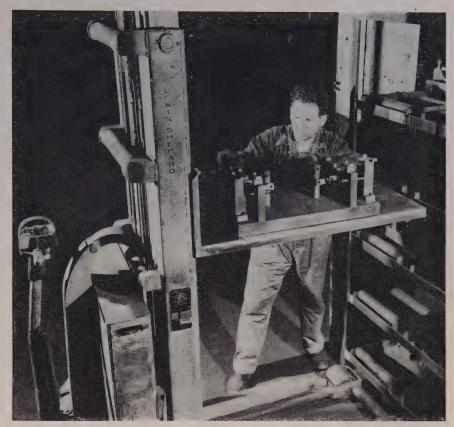
Another part is the link drive that connects the power source to the blade. The oil-impregnated part is pressed from an alloy steel powder, then case hardened. The pinion bearing used on the armature shaft and the main end bearings on the driveshaft are oil impregnated, bronze powder parts.

# Two New Alloys Offered

Two new high temperature alloys for jet engine and gas turbine uses are available in experimental quantities on a development basis from Allegheny Ludlum Steel Corp., Pittsburgh.

Alloy D-979 is a nickel-chromium based material produced by the consumable electrode vacuum melting process. Designed for applications requiring high strength at temperatures to 1600° F, it offers superior tensile and creep rupture properties.

Alloy AF-71, developed by Allegheny Ludlum under contract with the U. S. Air Force, is a high temperature, high strength alloy with good creep-rupture properties in the 1000 to 1500° F range. It is an iron-chromium-manganese material with low strategic alloy content. Allegheny Ludlum says it is almost as strong at 1500° F as other superalloys containing 40 to 50 per cent cobalt.



Rollers in the racks make it easy to move this 900-lb fixture from the truck

# Truck Rack Eases Handling

Compact electric trucks and storage racks with rollers give this company a flexible, inexpensive material handling system. They simplify storage of nonpalletized parts

HERE are some ideas on how to save time in handling and storing big in-process parts, fixtures, and raw materials.

Case History—Roller storage racks and electric trucks that can maneuver in aisles  $5\frac{3}{4}$  ft wide with loads 48 in. long are used by the Intertype Co., Brooklyn, N. Y., a division of Harris-Intertype Corp. The company makes printing and broadcasting equipment.

Take the moving of 900-lb nonpalletized milling fixtures to storage with JackStacker walkie trucks.

The operator lines up the truck's load-carrying platform with the roller racks, then slides the fixture off the platform and onto the rollers. He

reverses the process to remove a fixture from the racks. The racks and the truck (its capacity is 3000 lb) are made by Lewis-Shepard Products Inc., Watertown, Mass.

Raw materials such as round steel bars are placed on metal skids, inprocess parts in metal skid boxes. They are also stored in racks. Floor space is saved because the walkie trucks can stack to the ceiling—or to heights of 16 ft. The average load is about 1600 lb.

More Help—The trucks are used 8 hours a day, five days a week. Among their other duties: One is being used as a platform from which to do overhead work and maintenance.



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This 5000-lb cast stainless pump casing handles pressurized water (about 525°F) at the Shippingport (Pa.) Atomic Powerstation

# Alloy Casters See Growth

Users and producers predict bright industry future, especially in high temperature, high pressure nuclear applications. Cite need for standard specifications

HIGHER pressures and temperatures in power generating equipment (both nuclear and conventional) will bring about greatly increased use of stainless and high alloy castings, believes Dr. E. N. Skinner of International Nickel Co.

Dr. Skinner spoke at the third Heat & Corrosion Resistant Alloy Castings Conference at Inco's Harbor Island, N. C., corrosion test station.

New Designs—Only by increasing temperatures and pressures can you gain efficiency and lower unit cost in power generating equip-

ment. When designing components (such as pumps, valves, and fittings needed to handle pressurized water system in nuclear powerplants), high alloy castings have two big selling points:

1. Because of their complex shapes, the components are most economically made as castings. 2. At the higher temperatures being considered for new designs (above 1500° F), cast alloys have relatively great strength.

Specifications—Casting producers say they recognize the need to reduce the cost of equipment used

in reactor service but that some specifications force foundry expenses too high.

Many users and producers feel that present casting specifications are impeding the development of nuclear power equipment. Separate specifications covering components for nuclear power equipment, set up by the military, individual contractors supplying major equipment, and various groups responsible for standards, often are confusing.

Unrealistic—Many specifications have little to do with service conditions, casters complain. Demands for surface finish are considered excessive.

Some consumers believe needs can be served with finishes half as smooth as those being requested. Many specifications call for an rms finish, and some producers feel the designation is wrong for castings.

Conference participants agreed the right standard for cast surfaces is the cast surface comparator.

Needs—Reports from equipment makers indicate a need for improved materials to handle corrosive liquid coolants. Also needed are higher strength alloys for use in pressurized water reactors operating at 600 to 1000° F. Several answers were suggested, including the use of ferritic alloys such as ACI Type HE.

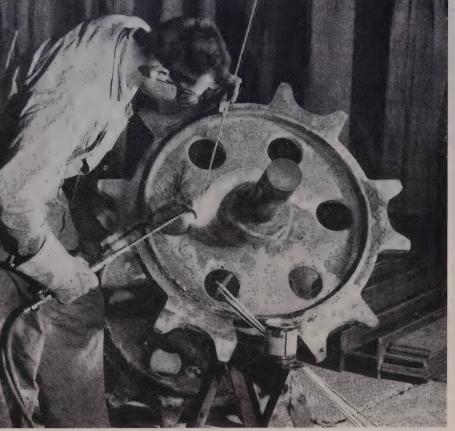
One encouraging report: In tests, pumps with impellers cast of Type CF-8C (it contains columbium), have handled liquid sodium at about 950° F. The company that made them says it is designing an all-cast stainless pump (impeller and casing) of Type CF-8, most frequently used of the 18-8 stainless alloys, to handle uranyl sulfate.

In Use — Detroit Edison Co.'s Enrico Fermi nuclear powerplant, under construction at Monroe, Mich., will include a pump cast of Type CF-4 or CF-8C stainless alloys to handle liquid sodium at 800 to 1000° F. The central station powerplant will use liquid sodium as a heat exchange medium to generate steam.

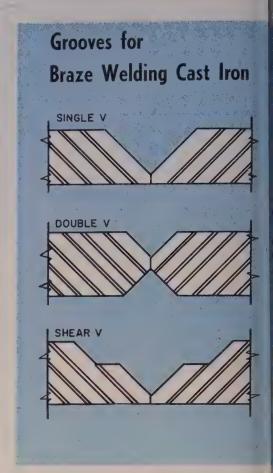
The Shippingport (Pa.) pressurized water reactor, operated by the Duquesne Light Co., uses cast stainless main stop valve bodies in each of the four primary coolant loops and a 5000 lb, double volute pump casting which meets ASME boiler code requirements.



May 26, 1958



It's frequently cheaper and more efficient to repair than to replace. Operator applies low fuming bronze rod to repair a crack in a large conveyor drive sprocket



# How To Weld Copper and Its Alloys

In addition to joining similar metals, copper alloys have proved their worth in joining and repairing other metals. Here are some of the rules for brazing and braze welding

#### PART FIVE

BRAZE welding is a basic tool for those who repair iron and steel equipment. All you need are low fuming bronze (RCuZnC) or naval brass (RCuZnA) electrodes, comparatively low temperatures, and little preheating to bring the weld area to a bright red.

Its advantages include: 1. Economy. 2. Easy application. 3. Low residual stresses, low distortion, and minimum cracking tendency.

#### Cast Iron

No embrittlement is encountered in the welding of cast iron, and the weld areas are machinable. In repairing iron castings, use the correct joint design. Edges should be beveled 45 degrees (90 degree included angle) in single, double, or shear-V joints. Avoid grinding: It smears the surface with graphite and can interfere with bonding. You can eliminate free graphite by heating to a dull red with an oxidizing flame. Clean the joint with a stiff wire brush.

Serves Need—Preheating a casting at 600 to 1200° F serves a two-fold purpose: Oil removal and maintenance of proper heat levels in large pieces. It's also required for complex castings (spoked wheels, gears, and frames).

Preheat areas and sequence vary

with the casting shape. They must be planned by experienced operators.

Weld slightly uphill. It will keep the molten weld metal from flowing onto a cold surface. The surfaces are left open to the heat, allowing the molten bronze to spread automatically when the correct temperature is reached. If you weld in the horizontal, take care to heat the surfaces thoroughly and apply the bronze sparingly at first. It keeps the braze metal from flowing forward too fast.

In vertical brazing, molten metal cannot flow ahead onto cold metal, and the danger of cold laps is practically avoided.

Auxiliary — Sound brazed joints require a suitable flux — the choice is a matter of preference. While special ones will eliminate surface carbon on cast iron, you



By LESTER F. SPENCER

Metallurgist

West Allis, Wis.

hould use them only for the first inning. They may produce porous welds if used throughout.

Flux can be sprinkled on the part during heatup and should be added continuously during deposition. The not rod can be dipped into dry lux, but it's more efficient to dissolve some in boiling water and paint electrodes with the solution prior to use. That has the advantage of added protection from oxidation.

Adjusting Equipment—The torch should have a neutral or slightly oxidizing flame. Select a tip size to melt and flow the bronze without having to stick the inner cone of the flame into the weld pool. The ntense heat of the inner cone produces heavy fumes and may severely oxidize the surfaces to be brazed. Avoid prolonged heating of the weld metal, or puddling—it wastes time

and gases and may impair quality. Forehand welding is the usual way, but a backhand technique is all right for heavy work.

Cast steel techniques are similar to cast iron. Joint bevels are less important, and you don't need a tinning flux.

#### **Wrought Steel**

Braze welding is used extensively by makers of furniture, bicycle frames, lawn mowers, portable saws, and similar assemblies.

Lap and butt joints are normally used. A lap joint depends on capillary action to pull in molten bronze. Strength depends on the area bonded and the clearance between the surfaces.

Although influenced by capillary action, the major portion of buttweld joint strength is supplied by a fillet of the brazing alloy.

Automatic fluxing works well with high production rates. A vapor fluxing apparatus in the fuel-gas line delivers a small but constant flow of flux as soon as the flame hits it. Fluxing is more complete; weld metal more fluid; and there is less tendency to fume. A relatively small amount of flux is deposited which cuts cleaning. Remember: The joints must be accessible, and it is not suitable for lap joints.

Operators ordinarily apply the rod manually to repair large castings or assemblies with oxyacetylene. But you can preplace rings or slugs of braze metal at joints. The method works well on small assemblies which can be adapted to mechanization.

# Brazing

This method is closely associated with braze welding. Silver filler metals are widely used. They have flow temperatures of 1150° to 1600° F. The ones with higher flow temperatures are for pure copper and the high copper alloys.

Lap, shear, and butt joints are best, and you must add a flux. Any heating method is suitable if the parts are quickly brought up to brazing temperature.

Avoid Reduction — Tough pitch copper can be brazed without oxide embrittlement, but avoid a reducing atmosphere, particularly hydrogen.

Lap joints are widely used: Make

the lap three times the member thickness for maximum strength.

Both the copper-phosphorus and the copper-phosphorus-silver brazing alloys work without fluxing, but you'll get a smoother, better looking joint with flux. All other brazing alloys require fluxing.

Deoxidized copper can be brazed, but you don't have to worry about embrittlement.

High zinc brasses are brazed with low temperature silver. Fluoride fluxes are better since they are active at the lower temperatures. The low zinc brass alloys can be brazed with a greater variety of fluxes.

Bronze—Silicon bronzes are readily brazed. Fluxing is especially important since these alloys form a refractory oxide which must be completely removed. In addition, it's possible for alloys to suffer some intergranular penetration of the brazing alloy when the structure is under stress. You can prevent it by stress relieving prior to the brazing operation. That is usually done by slow heat during the brazing operation.

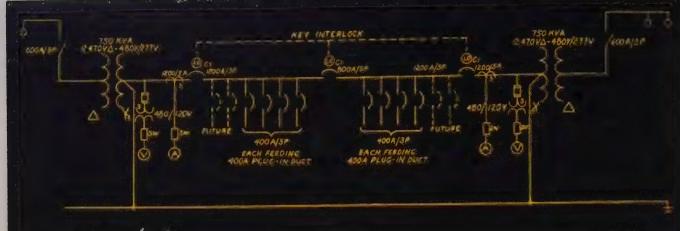
Phosphor bronzes (due to high tin and occasionally lead) require flux protection. The higher melting bronzes can use standard brass; all the phosphor bronzes can be brazed with silver. Special fluxing is required for silver brazing aluminum bronze.

You may run into trouble with dissimilar combinations like aluminum bronze to brass. You use two fluxes, one for each metal.

Nickel alloys respond well to brazing. Use a stress relief to avoid intergranular penetration. Silver brazing alloys are the usual thing, but brass works if you're careful during heatup (brass has a high flow temperature). Nickel bearing alloys are relatively poor heat conductors, so watch a tendency to overheat.

Copper-beryllium alloys require an exceptionally clean surface and a reactive flux containing fluoride compounds. Try to prevent the formation of beryllium oxide. Since this alloy is frequently solution treated, the silver brazing alloy is limited to those compositions that have a flow temperature above 1450° F.

<sup>•</sup> An extra copy of this article is available until supply is exhausted. Write Editorial Service, Steel, Penton Bldg., Cleveland 13, Ohio.



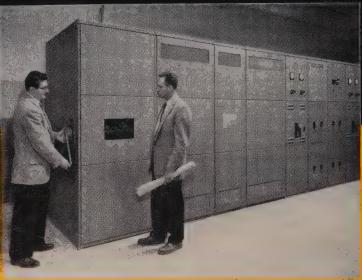
Notes

Interlock mains and tie.

Then SC amps=32,000 Max.

OK for 35,000 AIC brokers

# **Unit Substations** COORDINATE DESIGN



# **Cuts Costs and Saves Space!**

Square D designs and builds a complete line of Tie-in breaker is key-interlocked to permit tying substations for any application, indoor or outdoorwith dry or liquid-filled transformers — with large air breakers or molded case breakers—with motor control units.

A typical example is this 1500 KVA doubleended unit substation, designed to meet the special requirements of a Lexington, Kentucky, plant. Flexibility for future expansion and complete safety without service interruption were essential. The following features are incorporated in the unit:

Main breakers are 1200-ampere air circuit breakers

Feeder breakers used to feed Square D plug-in duct, are molded case breakers

units together when operating on one transformer in an emergency

Interrupting capacity of all molded case breakers exceeds the total maximum available short circuit current, including 100% motor contribution

By the proper application of molded case breakers, Square D engineers achieved a substantial reduction in both the size and the cost of the substation and with no sacrifice in performance.

For the complete story of Square D coordinated design, write Square D Company, 6060 Rivard Street, Department SA, Detroit 11, Michigan.



EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT...NOW A PART OF THE SQUARE D LINE

SQUARE D COMPANY

# Automatic Turret Lathe Has Rapid Setup

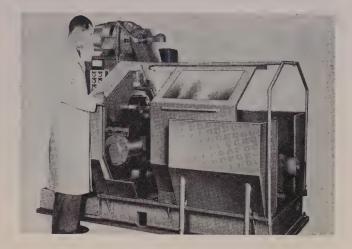
An automatic turret lathe for fast production of hard-to-machine alloys, Model 3E-15, has a 10-in. chuck capacity and  $11\frac{1}{2}$ -in. swing over base ways.

The front and rear cross slides are individually adjustable along the base ways. The control mechanism allows the operator to set slides for on-time or delayed movement (relative to any turret face) by

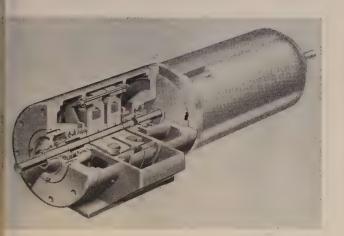
nerely turning a selector switch.

With no cams to change, setup time has been reluced, and production runs of 25 pieces can be handled on a fully automatic basis. Contributing to shortened setup are the easy to set programming drum and the readily accessible change gears.

The lathe is equipped with a 15-hp headstock. Write: Potter & Johnson Co., Pawtucket, R. I.



# Infinitely Variable Drive Eliminates Shock Load Factors



The infinitely variable speed Marvex drive, using a constant speed motor, is available in four dripproof models and six sizes.

Designed on the eddy current principle, the unit includes a separate controlled-slip coupling. It can be used as a variable speed gear motor or motor, or a special unit for integral mounting of speed reducers.

The unit is shockproof since the coupling is a magnetic field.

Driven by a 100-hp motor at 1750 rpm, units can be stalled at full torque without heating. Motors up to 150 hp at 1750 rpm are handled. Write: Cone-Drive Gears Div., Michigan Tool Co., 7171 E. Mc-Nichols Rd., Detroit 12, Mich. Phone: Twinbrook 1-3111

# Automatic Print-Out Provides Permanent Gaging Records

Permanent records of single and multiple dimension aging information are obtained automatically with print-out system used with automatic or manual nspection gages.

The recording system produces a documented dinension report of individual parts, or it may be used y suppliers of missile, ordnance, and precision comonents that require individual inspection reports.

The printer records single measurements, or with wo related ones, it computes the difference and prints

Pluniet air gage or Electrojet gage cartridges can e used as size sensing elements. Write: Sheffield Corp. Dayton I, Ohio, a subsidiary of Bendix Aviation Corp. Phone: Clearwater 4-5377



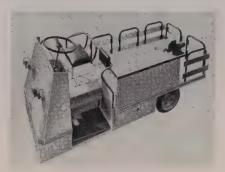
May 26, 1958

# NEW PRODUCTS and equipment

#### Truck Serviced from Top

A three-wheel industrial maintenance truck, powered by electricity, speeds a two-man crew to plant trouble spots. It has built-in work facilities, carries loads up to 1 ton.

The Electri-Car has provision for a stand-up driver and a sit-down rider. It comes with four industrial batteries and a built-in automatic charger, work bench with vise, built-in tool box, and a load area with steel and aluminum stakes.



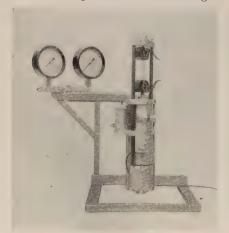
Its Dyna-Power gear motor, built for continuous and intermittent heavy-duty operation, has direct inline, two wheel drive.

The truck has a lift-up body for easy maintenance of batteries and mechanical parts. *Write*: Electri-Car Div., Victor Adding Machine Co., 3900 N. Rockwell St., Chicago 18, Ill. *Phone*: Keystone 9-8210

#### Tester Can Be Modified

The Cal-Tester, normally operated in a horizontal position, can be used vertically with the testing area in an up or down position.

Machine and gages are mounted on a portable, self-contained stand, and can be detached quickly for horizontal operation. The arrange-



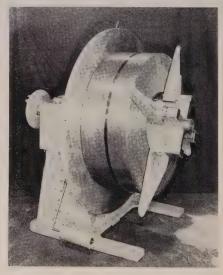
ment provides greater possibilities for making tensile, compression, and flexure tests on metallic and nonmetallic materials.

With accessories, tests with constant rate of load and ram speed control can be conducted. The unit is suited for use with environmental test chambers and meets Army, Navy, other federal, and ASTM specifications for accuracy and performance. Write: Cal-Testing Machine Co., 2735 S. Robertson Blvd., Los Angeles 34, Calif. Phone: Vermont 9-6200

# **Reel Centered Rapidly**

A motor-driven centralizing reel, Model ACR-1642, has a centering arrangement controlled by a handwheel. The cross members expand or contract to suit the inner diameter of the coil depending on the direction or rotation of the wheel.

Specifications: Takes material up to 16 in. in width, inner diameters from 14½ to 22 in., outer diameter 42 in. at 16 in. inner diameter, and weight capacity of 2500 lb.

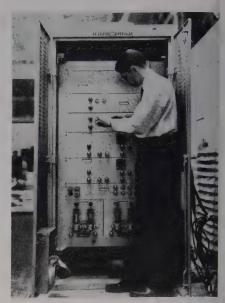


Included is a 2-hp motor for operation on 220/440 volts (3 phase, 60 cycles, alternating current). Write: U. S. Tool Co. Inc., Ampere (East Orange), N. J. Phone: Orange 5-4000

# Control Unit Packaged

Pre-engineered, Mark II numerical control package units can be applied to any machine requiring point-to-point positioning of linear or rotary motions. They are available for immediate delivery.

Benefits are seen in handling small lot production jobs at extreme-



ly close tolerances. Motors, operator's controls, position pickup devices, and tape reader are included in the package.

The unit offers positioning speeds up to 60 ipm and has an electrical accuracy of  $\pm 0.0005$  in. at travel lengths up to 99.99 in. For length of travel up to 399.99 in., electrical accuracies of  $\pm 0.005$  in. can be obtained.

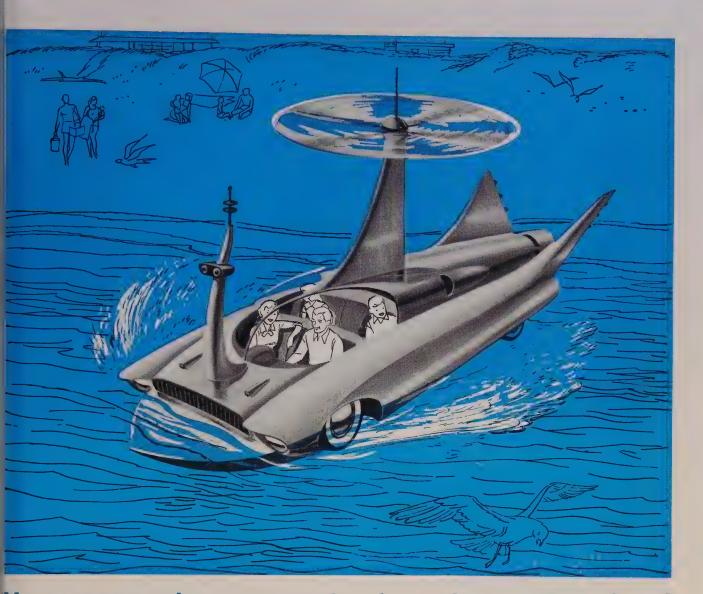
Mark II operates from standard eight channel, 1 in. wide tape or manually set decade switches. Operation can be semiautomatic or fully automatic. *Write*: General Electric Co., Schenectady 5, N. Y. *Phone*: Franklin 4-2211

# Lapping Cycle Automatic

A 24-in. semiautomatic lapping machine can deliver flatness to less than one light band (0.00011 in.) and a surface finish as low as 1 microinch rms.

The machine has a fully automatic work cycle—including the application of the lapping compound,





# No matter what you make from Cold Rolled Steel

# An ALAN WOOD Representative can help!

Thinking of making a Bi-Plane-O-Car? You might find a terrific market for this all-in-one get-about. But you might find unusual production problems, too. Better call your A.W. Representative before you start to produce. Your A.W. Representative may order a special metallurgical study of your problems and bring about savings that build new profits and increase produc-

tion. He can provide you with the latest information on cold rolled steel and its application, plus experienced advice on the gauge, size and type to order. Call him today. Your A.W. Representative is always available...never out of touch with your

location.

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A.W. Dynalloy
(high strength
steel)
Hot rolled sheets

steel)
Hot rolled sheets
Hot rolled strip
Cold rolled sheets
Cold rolled strip

ROLLED STEEL FLOOR PLATE A.W. ALGRIP abrasive

A.W. SUPER-DIAMOND pattern COAL CHEMICALS A.W. CUT NAILS
Standard &
Hardened

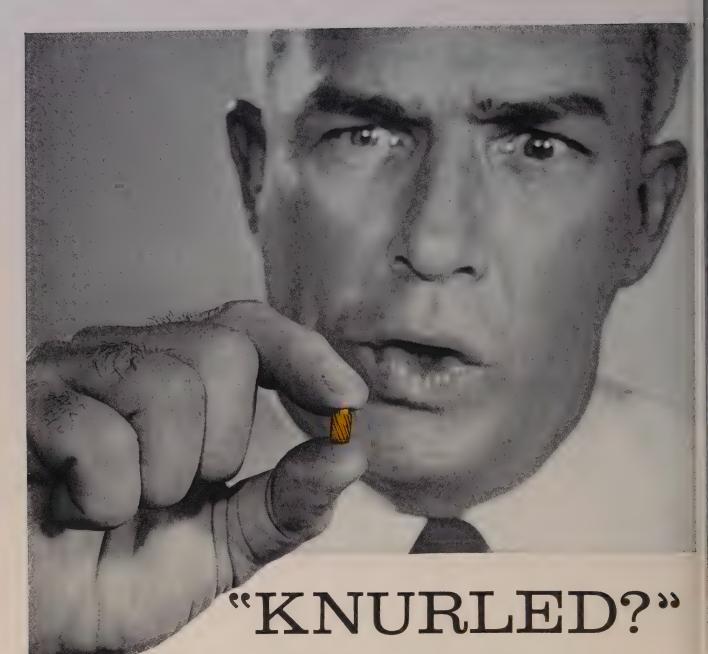
Mine Products
Iron ore
concentrates
Iron powder
Crushed stone
Sand

Coke Foundry, industrial & metallurgical

metallurgical
PENCO METAL
PRODUCTS DIVISION
Steel cabinets,

lockers & shelving

**fay 26, 1958** 



Don't blame you for doubting, but this is a fact. In fact, spelled out, this tiny part (and thousands like it, every day) is given a No. 20 coarse deep left-hand spiral knurl. And every one comes out clean as a whistle, as certified by Tyler Automatics Inc. of Thomaston, Connecticut.

This obviously is an unusually fussy job. But it was no tough problem for Bristol metallurgists who developed a free-cutting Brass rod of special chemical composition and temper. Then they followed through, and in two days they had this difficult alloy perfectly adjusted to the customer's shop practice and production schedules.

And Bristol Brass will follow through for you, too, on any job, no matter whether it's difficult or run-of-the-mill. But one thing you'll always find unusual... and that's Bristol Brass service. Give it a try and see for yourself.

# **Bristol-Fashion**

means Brass at its best

THE BRISTOL BRASS CORPORATION • SINCE 1850, MAKERS OF BRASS STRIP, ROD AND WIRE IN BRISTOL, CONNECTICUT Bristol Brass has offices and warehouses in Boston, Buffalo, Chicago, Cleveland, Dayton, Detroit, Milwaukee, New York, Philadelphia, Pittsburgh, Rochester, Syracuse

# NEW PRODUCTS and equipment

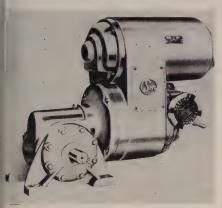
a variable speed drive for selecting best lapping rate, and magnetic truing rings which maintain continuous plate flatness while the machine is in operation.

The unit is designed primarily for doing small pieces in production lots but can accommodate any large workpiece that will fit in one of the  $8\frac{7}{8}$  in. ID truing rings.

Masonite separator plates can be cut, drilled, or otherwise shaped to accommodate parts of any outline. Toughest alloys can be lapped in the hardened state. It also handles nonferrous metals such as brass, bronze, and aluminum. Write: Taft-Peirce Mfg. Co., Woonsocket, R. I. Phone: Poplar 2-1000

#### **Gear Motor**

This variable speed drive is integrally combined with a right-angle gear reducer. Units may be operated horizontally or vertically, shaft up or down.



It is available in dripproof and totally enclosed construction. Speeds range from 5.5 to 360 rpm, and speed variations from 2:1 to 10:1. Write: Sterling Electric Motors Inc., 5401 Telegraph Rd., Los Angeles 22, Calif. Phone: Raymond 3-6211

# Six-Spindle Indexing

A floor model turret drill for machining holes up to \(^1/\pma\) in. in steel can perform a series of six operations from one work location.

The turret is power indexed, rotates itself, and only the spindle in use is in operation. Indexing is automatic, but each spindle will repeat any number of feed strokes without indexing if duplicate hole



sizes or operations are desired.

Each spindle operates at its own preselected speed, without need for changing belts, gears, or other speed reducers. Range varies from 350 to 6200 rpm. Two-step pulleys on the motor drive produce two complete speed ranges on each spindle.

The machine is mounted on an enclosed pedestal equipped with a coolant circulating pump and reservoir. Write: Burgmaster Corp., small tool division of Burg Tool Mfg. Co. Inc., 13226 S. Figueroa St., Gardena, Calif. Phone: Davis 9-4158

#### Motor Submersible

Submersible alternating current motors for coupling to pumps which operate continuously in oil, water, or liquid chemicals may be had in ratings from  $\frac{3}{4}$  through 15 hp.

The universal mounting flange of these polyphase, single voltage motors is connected directly to most standard pumps. The shaft of the motor serves as the pumpshaft, and



the assembly can be attached as a unit.

The pressureproof motors are oilfilled. A Neoprene diaphragm in the motor base flexes to offset differences between internal and external pressures. The single unit frame is corrosion-proof. Write: Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio. Phone: Redwood 2-7000

#### Quencher Speeds Work

The No. 117 quenching press handles heated gears and other round, flat, and cylindrical parts so that they are quenched quickly without distortion.

Rapid production results from decreased time in quenching dies plus automatic unloading. The machine will receive and discharge a workpiece in about 30 seconds.



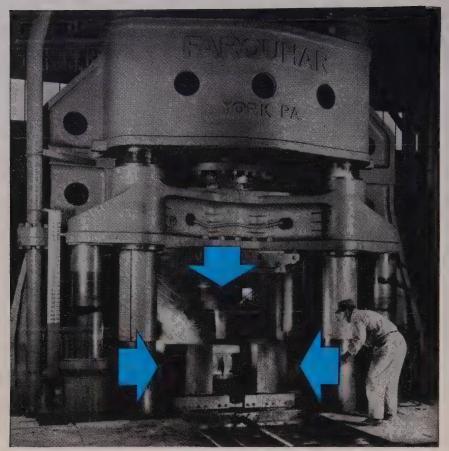
Pulsing (allowing the workpiece to contract without undue strains) is controlled by a valve which may be preset to any cycle. A built-in pumping system (300 gpm capacity) provides correct oil flow.

Ring gears and cylindrical parts up to  $8\frac{1}{2}$  in. maximum diameter and 8 in. maximum height can be handled. *Write*: Gleason Works, Rochester, N. Y. *Phone*: Greenfield 3-1000

#### **Tractor Pulls Carriers**

A motor-powered tractor, Type MT, for use on overhead tramrail systems is driven by two steel rollers under spring tension against the bottom of the track. Rubber drive rollers are available.

The unit can be used to advantage as a single-motor drive for



This 5000-ton Farquhar Split-Die Forging Press is used to form components of oil-well equipment at the Cameron Iron Works, Inc., Houston, Texas.

# This Forquhar Split-Die Forging Press forms both bore and periphery in one fast, clean operation

The job was to press-forge parts weighing up to 2000 pounds having irregular contours on both the bore and the periphery. These parts in service had to withstand working pressures up to 15,000 pounds per square inch and temperatures up to 1600 degrees F. The successful solution was to put the job on a Farquhar Split-Die Forging Press.

This Farquhar Split-Die Forging Press applies horizontal forces from opposite directions as well as the normal down-action. The result is the production of high-strength parts with unusually clean surfaces whatever the contour. This cuts finish machining time to a minimum and provides forgings with uniform physical properties and controlled grain structure. Reported production savings run as high as 25% with rejects kept to a minimum.

For your tough forming jobs, investigate Farquhar Split-Die Forging Presses. Write today for complete information or ask for our recommendations and proposals.

#### Special Machinery Built to Your Requirements . . .

Our skilled staff will economically build your special machinery. We'll process your inquiry promptly.

#### A. B. FARQUHAR DIVISION

The Oliver Corporation

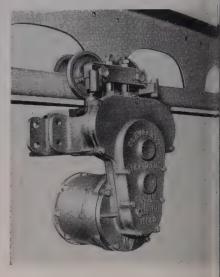
Press and Special Machinery Department York 55, Pennsylvania

OLIVER

Farquhar PRESSES

Also Manufacturers of Farquhar Conveyors

NEW PRODUCTS
and equipment



one or more carriers in a train; and can be used for motorization of hand power cranes and carriers. It is especially adaptable for systems that have inclined tracks.

Minimum speeds depend on motor horsepower—maximum is 300 fpm. The tractor is recommended for floor-controlled carriers or cranes and automatic dispatch units. Write: Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

# Automatic Checkweighing:

A line of Selectrol automatic checkweighing machines can prove weight accuracies in the range of 1 part in 5000 up to 1 part in 20,000. Units are made in capacities from 1 gram up to 100 lb.

Automatic transfer mechanisms place and remove the commodity with a minimum of impact. The





# **NEW GIANT LOCKS for the busy Ohio**

The \$18½ million Markland Locks are typical of the special "in or around water" construction jobs handled by Dravo. To date, this job has required: a river cofferdam to seal off a 25-acre site; pumping out 350 million gallons of water from the lake that was formed; excavating a million cubic yards of earth and rock; using nearly a half-million cubic yards of concrete for the locks and guard walls.

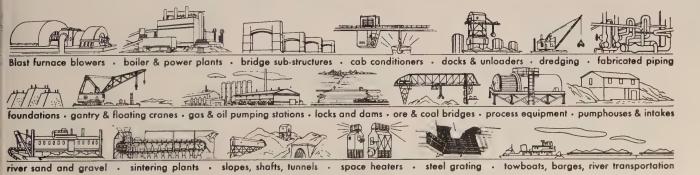
Other examples of notable Dravo con-

struction jobs can be found in Lake Superior, where a complete harbor and dock facility for ore boats has been completed . . . in New Orleans, where four main piers for the nation's longest highway cantilever bridge have been built . . . Burnside, La., where special dock and unloading facilities for seagoing vessels, waterway towboats and barges are now under construction.

If your plant expansion or modernization involves difficult construction and foundation problems or any of the products or services listed below—you may be interested in learning more about Dravo's special approach to the needs of industry. Write Dravo Corporation, PITTSBURGH 25, PENNSYLVANIA.

# DRAVO

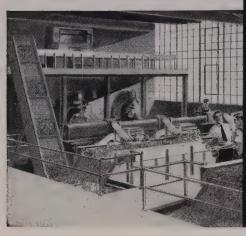
ORPORATION

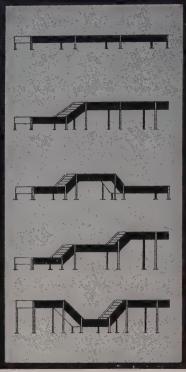


May 26, 1958

# MAY-FRAN

# CONVEYOR STANDARDIZATION





# ... SAVES YOU MONEY

# NOW AND IN THE FUTURE!

Here is a conveyor program designed for the unusual. NOW . . . you can have a customized conveyor today to meet production needs . . . and with modification, that same conveyor will meet the needs of tomorrow.

The May-Fran conveyor standardization program provides the standard components that can be assembled to form a special or standard conveyor. These same components can be re-arranged at any time to solve production problems in the future.

In addition, standard components mass produced mean conveyor economy right from the beginning.

Here is a conveyor program of standardization program that saves you money now . . . and in the future!



Bulletin MF-200

Write today for your copy of

Y-FRAN ENGINEERING, INC.

1725 Clarkstone Road, Cleveland 12, Ohio

#### PRODUCTS and equipment

transfer unit causes no accuracy problem since its mechanisms are not connected to the scale lever sys-

Model 144 employs a rotary transfer mechanism with one loading, one weighing, and two discharge stations. Model 145 incorporates an in-line "walking deck" transfer mechanism. Both models operate at speeds up to 60 weighings a minute, depending on capacity and accuracy required. Write: Weight Scale Co., Columbus, Ohio. Phone: Capitol 4-6187

## Handles Heavy Materials

This pallet lifter meets the demand for a unit that will handle sheet steel, heavy dies, and large pallets. It makes possible the handling of palletized loads by cranes



or hoists in areas inaccessible to fork trucks, and at lower cost.

Capacity of this unit is 10,000 lb. Write: Cady Metal Fabricating Co., 88 Schenk St., North Tonawanda, N. Y. Phone: Jackson 4145

# Machine Tests Pieces

TensilkuT power equipment machines specimens for tensile, fatigue, and other physical tests. Workpieces from 0.00025 in. foil or 0.500 in, plate can be precision machined from a wide range of metals including aluminum, stainless steel, copper, titanium, uranium, lead, and the superalloys.

An unskilled operator can duplicate specimen configurations within



single stand reversing plate mill

# BLAW-KNOX PLATE MILLS

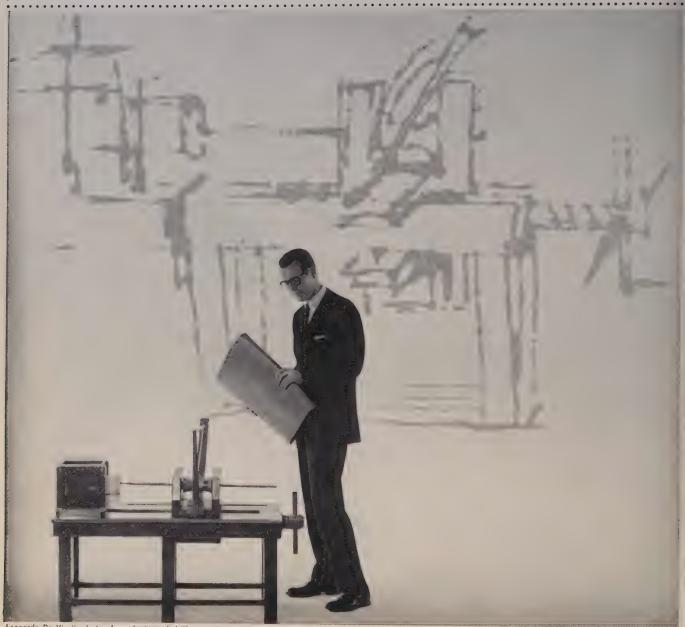
Blaw-Knox designs and builds a full range of continuous or single stand reversing plate mills for rolling ferrous and non-ferrous slabs. Other Blaw-Knox equipment for the metals industry includes complete rolling mill installations including all auxiliary equipment for ferrous and non-ferrous metals, iron, alloy iron, and steel rolls, Medart cold finishing equipment, carbon and alloy steel castings, fabricated steel plate or cast-weld design weldments, steel plant equipment, and heat and corrosion resisting alloy castings.



# BLAW-KNOX COMPANY

Foundry and Mill Machinery Division
Blaw-Knox Building • 300 Sixth Avenue
Pittsburgh 22, Pennsylvania

# creative designing calls for an open mind



Leonardo Da Vinci's design for a horizontal drill press.

Scale model courtesy of IBM

# EVEN DAVINCI'S HORIZONTAL DRILL PRESS COULD HAVE BEEN BETTER WITH HELP FROM AN 圖比F ENGINEER.

Designs improve with help from an BRF engineer because his line covers all four types of ball and roller bearings in many thousands of sizes. In no way are his recommendations confined by his product line. Quite the contrary. He has the kind of flexibility he requires to keep an entirely open mind on any bearing problem. Give your problem to BRF and see.











Spherical, Cylindrical, Ball, and Tyson Tapered Roller Bearings

BEF INDUSTRIES INC BHILADEL BULL 20 DA





tolerances of  $\pm 0.0005$  in. with machined edges free of cold working and requiring no hand finishing.

Machines are available in table or floor models. *Write*: Sieburg Industries Inc., Horse Plain Road, New Britain, Conn. *Phone*: Baldwin 5-2226

# **Quick Sheet Separation**

The Magni-Power Separator offers efficient separation of oily steel sheets and blanks for operator feedng of presses and shears.

Damage to inside elements is eliminated by a stainless steel case



und fully welded construction. Verical ribs on the magnetic surface offer less friction and give one-point contact for quick and sure separation.

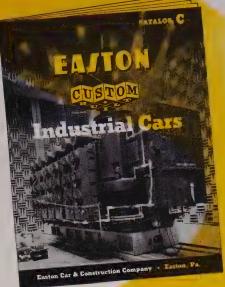
A full line of sizes and strengths s offered. Write: Magni-Power Co., Wooster, Ohio. Phone: Howard 2-9896

# Coil Handled Safely

A motor-driven coil grab provides afe, one-man handling of metal coils. Mansaver 1627-DN is for single rim gripping; 1627-DC handles wo coils.

The motor applies the initial grip oprevent primary coil slippage, and he unit's mechanical Wedge-Grip tutomatically holds the load while

# IDEAS for heavy duty materials handling



CUSTOM

TRADEMARK

EASTON CATALOG C describes 39 different types of heavy duty EASTON industrial cars and trailers, with capacities from 2 to 500 tons, including motorized and automated units, for handling all kinds of loads.

IDEAS inspired by EASTON CAT-ALOG C may save important time and money in your heavy handling operations.

A - 10

Write Now for Free Copy of Catalog C

**Domestic Offices and Representatives** 

Easton, Pa. Chicago Philadelphia Boston Milwaukee Pittsburgh Buffalo New York St. Paul



EASTON CAR & CONSTRUCTION COMPANY • EASTON, PA.

# DEADLINE

June 15, 1958, for your entry in

# STEEL

#### COST CRISIS COMPETITION

The article on Page 100 is an example of what the editors are looking for in their search for companies that have made important cost savings through more efficient use of capital equipment. Does your company qualify? If so, enter the competition—no later than June 15, 1958. Write to the Cost Crisis Editor, STEEL, Penton Bldg., Cleveland 13, Ohio, for your awards kit.

(vfay 26, 1958)

# LOOK WHAT HAPPENS

when you

Call Cambridge

for

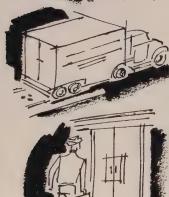
INDUSTRIAL WIRE CLOTH AND SCREEN

# **Bulk or Fabricated Parts**



#### INQUIRIES ARE ANSWERED PROMPTLY-

Whenever you call or write for information on prices, availabilities or service, you get a prompt reply.



#### DELIVERIES ARE MADE ON TIME-

Orders for the most frequently used types of wire cloth are promptly filled. If we can't supply what you want from our complete stock, we'll schedule our looms to get it to you as soon as possible.

INSTALLATIONS ARE CHECKED—At Cambridge, orders aren't filled and forgotten. Our own sales engineers follow up your order to make sure our

product is giving you the best possible service.

**QUALITY, OF COURSE**—Individual loom operation and countless checks on mesh size and mesh count assure you of highest quality wire cloth when you specify Cambridge.

Let us quote on your bulk or fabricated wire cloth needs. Samples for inspection or test purposes are available upon request. Call your Cambridge FIELD ENGINEER. He's listed in the phone book under "Wire Cloth." Or, write direct for FREE 94-PAGE CATALOG and stock list giving full range of wire cioth available. Describes fabrication facilities and gives useful metallurgical data.



WIRE CLOTH METAL-MESH CONVEYOR BELTS

WIRE CLOTH FABRICATIONS Department J, Cambridge 5, Maryland

OFFICES IN PRINCIPAL INDUSTRIAL CITIES



# PRODUCTS and equipment



in midair. This device also prevents the load from being released should power fail.

Coil edges are protected from damage, because it is not necessary to rest the device on the coil to release it. *Write*: Mansaver Industries Inc., New Haven, Conn. *Phone*: Spruce 7-6463

#### Mast Loads and Stacks

A high mast, developed for all Hustler Pug electric lift trucks, extends to a maximum height of  $135\frac{1}{2}$  in. for stacking.

The mast can be brought down to a height of 69 in. to permit work



in production areas. It can also be used for loading highway trucks. The unit is composed of three telescoping sections. *Write*: Hustler Corp., 17515 Elm St., Willoughby, Ohio. *Phone*: Whitehall 2-1757

# Two Generators in One

A dual frequency generator has been added to a line of high frequency induction heating units. It



# Dense copper deposit Telps make a "brain" bright

ince a good memory is vital to computers, BM plates memory cylinders with the Uninrome Pyrophosphate Copper Process. The eposit from this bath shows an exceptionally nooth, dense deposit of uniform structure.

For the same reason, electronics manufacurers use it in printed circuits. Metallurgists pecify it for masking or "stop off" work in itriding and carburizing operations, since it takes a more impervious shield with thinner eposits. Send for data on M&T's complete line f copper plating processes.



# METAL & THERMIT

GENERAL OFFICES: RAHWAY, NEW JERSEY
Pittsburgh • Atlanta • Detroit • E. Chicago • Los Angeles
Canada: Metal & Thermit — United Chromium of Canada, Limited, Rexdr '-. Ont.

# Only 70¢ worth of material protects all these rims

Zinc plated truck wheel rims are chromate treated with a Unichrome Dip Compound at CLEVELAND WELDING DIVISION, AMERICAN MACHINE & FOUndry company. A mere 70¢ worth of this material in solution was sufficient to treat all the rims visible in the picture above for extra corrosion resistance and a better base for paint.

Metal & Thermit offers one of the widest lines of chromating materials now available. Send for handy "Pick-a-Dip" chart.



# Plastisol seals out corrosion

Unlike plastic sheets, Unichrome "Super 5300" Plastisol poses no seam problems in lining tanks. It sprays on. It therefore protects even sharp bends and complicated shapes. This vinyl compound bakes to a seamless, pore-free coating that maintains a tight "seal" under severely corrosive conditions.

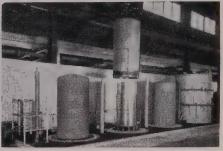
Thicknesses of up to 60 mils per coat can be achieved by spraying...in-plant, or at the facilities of applicators in key locations. Send for data.



**Built to Suit Your Plant, Product or Process** 



Part of an installation of large gas fired three-stack rectangular bell type forced circulation special atmosphere furnaces for annealing strip.



Built right—over 20 years ago—this EF installation is still in operation, daily—and producing first class work.

Single or multi-stack—circular, rectangular or square types—upright, elevator or partial pits—gas fired, oil fired or electric—correctly designed, built and installed, ready to produce.

Backed by over 40 years of practical furnace building experience, EF furnaces incorporate all the advantages of all bell type designs, for processing strip, wire, rod and other ferrous and nonferrous products.

EF bell type furnaces installed over 20 years ago are still in service daily, producing first class work. There's no substitute for experience.



Part of another installation of large EF gas fired three-stack rectangular bell type forced circulation special atmosphere furnaces for annealing steel strip.



EF gas fired special atmosphere rectangular bell type strip annealers with individually controlled forced circulation three-stack bases each with capacity of 135,000 lbs. per charge.

Submit your production furnace problems to experienced EF engineers—it pays.

B

#### **BULLETIN No. 461**

shows typical installations of EF Gasfired, Oil-fired and Electric Furnaces.

Send for a copy today!



GAS FIRED OIL FIRED AND ELECTRIC FURNACES FOR ANY PROCESS, PRODUCT OR PRODUCTION

Salem - Ohio

Canadian Associates . CANEFCO, LIMITED . Toronto 1, Canada





is rated at 10 kw of output power. The lower frequency range is 250 to 600 kilocycles; the higher, about 2 to 5 megacycles.

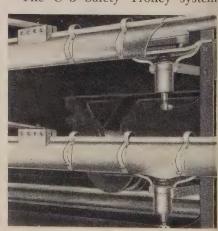
The unit provides flexibility in heating operation where frequency may be important, without changing the basic features of the standard generator or purchasing two separate generators.

Megacycle frequencies are ideal for heating thin parts, semiconductor materials, and for superficial heating. *Write*: Lepel High Frequency Laboratories Inc., Woodside, N. Y.

# **Trolley System Safe**

An electric trolley system of different design provides a high degree of safety and ends the need for maintenance caused by foreign matter coming in contact with any part of the system.

The U-S Safety Trolley system





# HOW NBD CENTRIFUGAL CASTING CAN CUT COSTS OF BRONZE PARTS

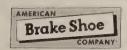
Engineers know that centrifugal castings have a man-sized strength and soundness hard to match.

This means that in many cases you can design a big part smaller . . . a heavy part lighter . . . and you still get the casting strength you want.

Cost saving can be substantial.

Find out now where you can use NBD centrifugal bronze castings and save. We'll help you with the engineering.

Mail this coupon for the new NBD Facilities for Centrifugal Casting book. It'll show you the alloys, weights and sizes NBD is equipped to centrifugally cast and machine.



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# FIRST BASIC OXYGEN FURNACES

# at Jones & Laughlin use Research-Cottrell Precipitators

Industry's toughest gas cleaning problem. That's how they refer to the job of removing dust from basic oxygen furnace gases. Briefly, here's what's involved:

34 pounds of dust for each ton of blast furnace hot metal. 90% of this dust is less than 1 micron. Dust concentration is about 11 grains per cubic foot. Over 98% guaranteed collection efficiency.

The Research-Cottrell precipitators at Jones & Laughlin Steel Corporation's Aliquippa, Pa., plant are designed to process from 250,000 cfm to 400,000 cfm of the above gases at conditions developing a

collection efficiency of 98%.

The diagram and text on the next page explain briefly how Research-Cottrell precipitators fit into the basic oxygen steel making process. If you would like more information on how to insure high dust collection efficiencies—at a low cost—get in touch with your nearest Research-Cottrell representative. Whether your problem involves iron blast furnace, ferro manganese blast furnace, open hearth, sintering or other steel industry applications, you can count on an economical solution to your problems at Research-Cottrell.

# Research-Cottrell

RESEARCH-COTTRELL, INC. Main Office and Plant: Bound Brook, N. J. • 405 Lexington Ave., New York 17, N. Y.

- Grant Building, Pittsburgh 19, Pa. 228 N. La Salle St., Chicago 1, III. 58 Sutter Street, San Francisco 4, Calif.
- Research-Cottrell (Canada) Ltd., 33 Bloor Street East, Toronto 5. Ontario.

## How Research-Cottrell Gets over 98% **Collection Efficiency**

First, the gases generated at the furnace are burned with excess air and cooled in a water-jacketed hood and chamber with water sprays. The water spray header acts as a baffle for the gas, causing the larger particles to fall into the "spark box" and from there to a settling tank.

The gas is further cooled by radiation in the flue connecting the spray chamber to the "gas inlet." The purpose of the "gas inlet" section is to decrease the gas flow, allowing still more of the large particles to drop into the "expansion chamber" before entering the precipitator.

In order to achieve such high collection efficiencies, collecting plates must be kept clean. This means that rapping is a highly critical factor in the overall efficiency. Both MI Rappers used for collecting electrodes and the high tension syntron vibrators are operated continuously and automatically. They can be varied in cycle and intensity of rapping time to maintain high efficiencies under changing conditions.

As in all new applications pioneered by Research-Cottrell, the experience of over 2000 precipitator installations throughout American and Canadian industry resulted in another outstanding solution to a gas cleaning problem.

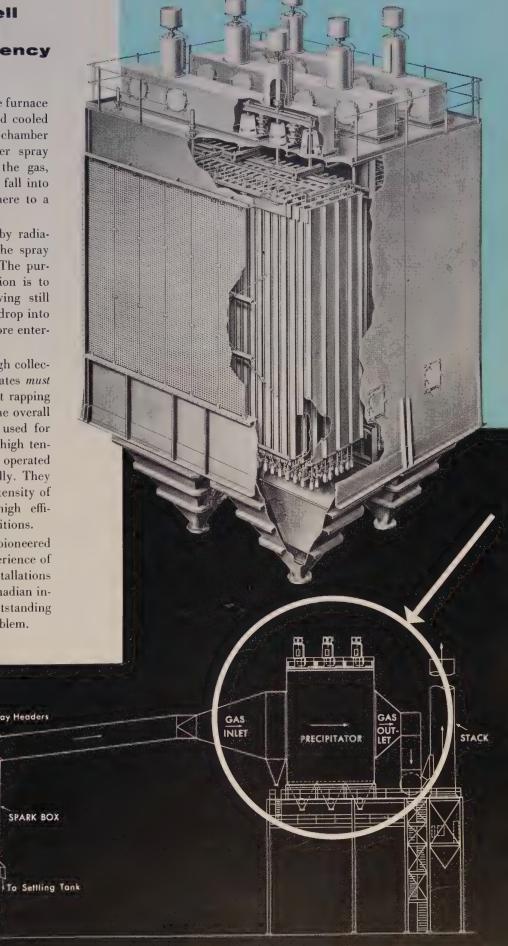
Water Spray Headers

Water Jacketed Spray Chamber

Hood Cradie

HOOD ater Jacketed

FURNACE



# NEW PRODUCTS and equipment

carries high amperages required by heavy duty cranes and similar equipment. A flexible sheath covers both bus and shoe—Koroseal for inside applications, and Neoprene and nylon for outside.

This copper-to-copper setup maintains total area of contact between conductor and collector. This, combined with the sheath, allows continuous operation in the presence of dirt, grease, or acid fumes. It is

self-de-icing on exterior installa-

Systems are available for operation on 110 to 600 volts; collectors range from 70 to 1125 amperes. Write: U-S Electric Mfg. Co., 1068 Banksville Rd., Pittsburgh 16, Pa.

#### **New Truck Fills Need**

A low cost, battery operated hydraulic fork and platform lift truck, the 299, is equipped with a 12-volt industrial battery and a self-contained battery charger.

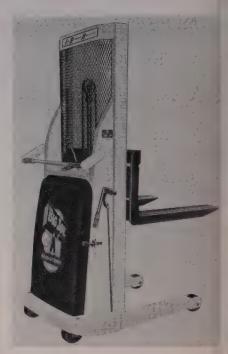




The best welding current ever produced is delivered here. You get maximum arc stability for sounder, denser welds with all electrodes in all positions. And you get more of them in less time! This revolutionary performance coming from a machine of record-breaking dependability (see January welding magazines), has led industry and individuals to say of the Miller Gold Star SR-DC: "The SR gives perfect dc welding current; Easiest arc starting — bar none; Smoothest arc I ever used, and quiet to boot."

Available in both duplex and single models with ampere range from 200 to 1200. Complete complement of control equipment gives the Gold Star SR unlimited flexibility, plus milestone performance and unmatched dependability.

EXPORT OFFICE: 250 East 57th 51., New York 19, N.Y. • Distributed in Canada by Canadian Liquid Air Co., Ltd., Montreal



The unit was introduced to satisfy demand for a machine suited for handling loads up to 1000 lb. It lifts loads to a height of 57 in. Other models of the series will have lifting heights of 67, 77, and 87 in.

The company also offers trucks in telescoping lift, outdoor, and pedal hydraulic styles. *Write*: Big Joe Mfg. Co., Wisconsin Dells, Wis.

# Rectifier Efficiency High

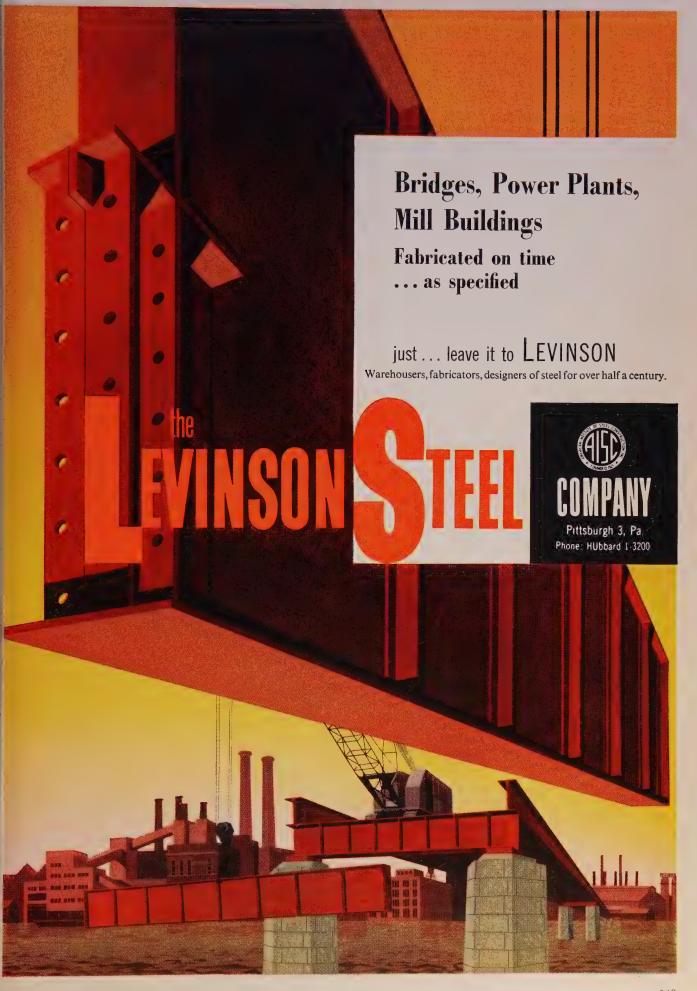
High efficiency, no aging, ability to operate in ambient temperatures over 200° F, and high voltage rating are among advantages of a new silicon plating rectifier.

Designed for easy accessibility, the unit can be adapted for a variety of controls, depending upon the application. It includes a Class B transformer, is equipped with a coil for each cell, has individual fusing with pilot light failure indicator, single phase protection, and blower type fan. Write: Equipment Div., Wagner Brothers Inc., 7800 Dix Rd., Detroit, Mich. Phone: Tulsa 3-0100

# Machine Cycle Variable

A vertical drilling and boring machine has a 30 or 60 hp power unit lubricated by an internal pressure system.

The standard automatic cycle consists of rapid advance down, feed, and rapid return. Positive actuation of feed stroke is provided by a cam-operated valve. Variations of cycle are available. Length of



# ANOTHER INDUCTO INSTALLATION ...



PHOTO COURTESY OF BUSHINGS, INC., PHILA. 32, PA.

# The Foundry and the Feather Duster

Shortly after Bushings Incorporated, a Philadelphia manufacturer of cast bronze bushings and bearings, replaced four oil-fired furnaces with an INDUCTO Push-Out induction furnace, the management received a strange request... the foundrymen wanted a feather duster. They liked the INDUCTO furnace and control so much, and were so pleased with the cooler and cleaner foundry, that they wanted a feather duster to keep the equipment clean.

And the management was pleased too! For in addition to happier and more productive employees, they gained other benefits. The higher melting speeds and precision control of the INDUCTO Push-Out furnace helped reduce metal losses. In addition, it became possible to reclaim metal from melts and machining. Production time was saved in the handling of crucibles and the transferring of melts. In fact, the one INDUCTO Push-Out furnace provided as many melts in six hours as the four oil-fired furnaces did in eight.

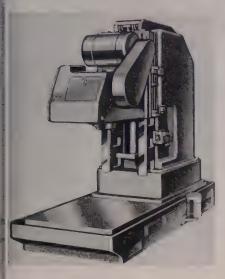
Why not learn for yourself how INDUCTO furnaces and precision control can help modernize your foundry and save production dollars? Write today for more complete details.



# INDUCTOTHERM corporation

412 Illinois Ave. Delanco, N. J.

# PRODUCTS and equipment



feed stroke is varied by positioning of cams mounted to the slide.

The vertical slide is 26 in. wide by 48 in. long. Stroke of 15 or 30 in. is optional. Write: Motch & Merryweather Machinery Co., 1250 E. 222nd St., Cleveland 17, Ohio. Phone: Ivanhoe 6-3600

# Reducer Cuts Downtime

A motorized gear reducer unit, called Line-A-Spede, is powered by standard NEMA frame motors that are shelf-mounted to the reducer.

Double, triple, and quadruple reductions, with ratios up to 1487 to 1, are available for motor ratings of



I to 74 hp. Units are made for horizontal, vertical, flange, incline, sidewall, or ceiling mounting.

The gear portion is available without motor or mounting shelf. Write: Dept. P, Louis Allis Co., 427 E. Stewart St., Milwaukee I, Wis. Phone: Humbolt 1-6000

# Press Drive Is Unitized

A line of 22, 32, and 45 ton open back inclinable presses, called Torc-Pac O.B.Is, features an air-friction

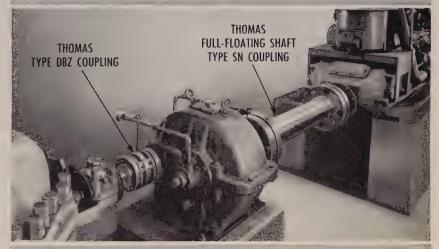


clutch and brake as standard equipment.

Clutch and brake plates are longwearing sintered bronze. They operate in an oil bath. This bath serves an important function in addition to lubrication, for much of the pickup load is accomplished before a metal-to-metal contact of the plates takes place. Clutch and brake never require adjustment.

Presses have an integral drive unit which consists of all working members of the drive and slide. The drive can be detached from the press as a single unit by removing six bolts. Write: Clearing Machine Corp., division of U. S. Industries Inc., 6201 W. 63rd St., Chicago 38, Ill. Phone: Portsmouth 7-8700

# THOMAS ALL FLEXIBLE COUPLINGS



# NO LUBRICATION NO MAINTENANCE NO WEARING PART

Future maintenance costs and shutdowns are eliminated when you install Thomas Flexible Couplings. These all-metal couplings are open for inspection while running.

They will protect your equipment and extend the life of your machines.

Properly installed and operated within rated conditions, Thomas Flexible Couplings should last a lifetime. Under Load and Misalignment only Thomas Flexible Couplings offer all these advantages:

- 1 Freedom from Backlash Torsional Rigidity
- 2 Free End Float
- 3 Smooth Continuous Drive with Constant Rotational Velocity
- 4 Visual Inspection While in Operation
- 5 Original Balance for Life
- 6 No Lubrication
- 7 No Wearing Parts
- 8 No Maintenance

HIMAS

Write for Engineering Catalog 51A

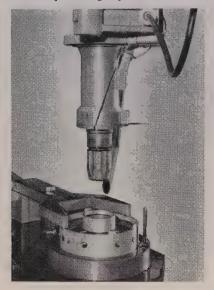
THOMAS FLEXIBLE COUPLING COMPANY
WARREN, PENNSYLVANIA, U.S.A.

145

# Why MICROHONING

# Provides Lower Cost — Consistent Accuracy — Maximum Production

Success of modern mass production invariably depends on complete interchangeability of parts. Thus, processing procedures that provide consistent accuracy at high production rates are required—Microhoning machines



having automatic Microsize gaging assure "all parts are created equal" at a faster rate and at lower cost.

The variety of work piece and processing factors that influence automatic sizing are too diversified to be encompassed by a single gaging technique. Thousands of Microhoning applications have verified this fact. Therefore, through its continuing program of research and development, Micromatic has designed several automatic gaging devices—each provides advantages for specific types of use. Typical of features to be found in Microsize controls are the following two examples:

# **EXPANDING GAGE MICROSIZE**

- 1 Gage wear held to a minimum—gage enters work collapsed.
- 2 Fine size adjustment through a range of .010" on diam.
- 3 Geometric accuracy—free-floating tool and/or part.
- 5 No limit on maximum bore diameter to be gaged.

## **GAGE RING MICROSIZE**

- 1 Simple to operate and maintain.
- 2 Geometric accuracy—free-floating tool and/or part.
- 4 Gages bores from .120" to 4" diam.
- 5 Only honing tool enters bore—nothing to mar finish of soft surfaces.

The real answer to efficient automatic gaging is found in applying the right gaging technique to each job—it is here that Micromatic "know-how" can be of vital service to you.

Learn why Microhoning will give eff closer tolerances, accurate alignment an Please have a Micromatic Field Engin Please send Micromatic literature an NAME	d functional sur neer call.	rfaces.	THROUGH TO NOTHING TO SOUTH TO
TITLE			
COMPANY			
STREET			
CITY	ZONE	STATE	к

# MICROMATIC HONE CORP. 8100 SCHOOLCRAFT AVENUE . DETROIT 38, MICHIGAN

# \*\*\* iterature

Write directly to the company for a copy

## Strip Roll Selection

"Suggestions on Rolls for Best Strip Rolling Practice," a special issue of the Fenn Engineering News, contains basic information on types and uses. Included are selection tips, answers to roll questions, and maintenance advice. Fenn Mfg. Co., Newington, Conn.

## Submerged Arc Welding

Folder 5205.1 outlines the mechanized Squirt Welder, ML-3, which provides the precision of automatic welding with the flexibility of manual. Lincoln Electric Co., Cleveland 17, Ohio.

## Magnets

Catalog No. PR-19 describes stock permanent magnets, magnetizers, and demagnetizers. Listed are over 70 cast Alnico V magnets and over 30 sintered Alnico II magnets available for immediate shipment in experimental quantities. Indiana Steel Products Co., Valparaiso, Ind.

## Steel Handling

How handling structural steel products with straddle carriers has reduced costs is outlined in Job Study No. G-102. The report is on use of a 60,000-lb carrier to transport bulky loads of steel up to 110 ft in length. Towmotor Corp., Cleveland 10, Ohio.

## Beryllium Hazards

"Plain Talk on Beryllium" is a 12-page booklet on the industrial hygiene aspects of beryllium metal, oxide, alloys, and other products. During extraction and fabrication, some forms of the metal constitute a health hazard when improperly handled. This booklet is issued to counteract many general statements found in nonprofessional publications. Beryllium Corp., P. O. 1462, Reading, Pa.

#### **Electric Fork Truck**

Described in Bulletin 1319 is electric fork truck FTA-30. Dimensions, speeds, details of design and construction of this 3000-lb capacity truck are provided. Baker Industrial Trucks, division of Otis Elevator Co., Cleveland 2, Ohio.

#### Investment Casting

A condensed data file for designers and users of investment castings contains charts showing comparative tolerances, sections, finishes, tooling time, and relative costs of all casting processes. Rode Inc., 3 Green St., Woburn, Mass.

#### **Electric Power Drives**

A 64-page catalog simplifies the selection of electric power drives through the use of color coding and a numeral system. Contained are prices, modifications,

#### **NEW LITERATURE . . .**

and dimensions on: Gage motors, gear motors, speed reducers, and variable speed drives. Sterling Electric Motors Inc., 5401 Telegraph Rd., Los Angeles 22, Calif.

#### Chain Hoists

A 4-page bulletin, No. 2367, describing Thor H-1000 air hoists, includes tables on rate of ascent and descent under various load conditions and air pressures. Thor Power Tool Co., Prudential Plaza, Chicago 1, Ill.

### Steel Tubing Guide

A steel tubing buyer's guide, Bulletin 12-10, provides characteristics, size ranges, response to fabrication, and the relative cost of seamless and welded, mechanical and structural, carbon steel tubing. Condensed information is given on stainless steel and aluminum tubing and pipe, and plastic pipe. Joseph T. Ryerson & Son Inc., Box 8000-A, Chicago 80, Ill.

### Crane Hook Blocks

A bulletin describes the complete line of Max-Lift crane hook blocks and includes data on number of sheaves, sheave diameter, rope diameter, type and number of bearings, and weights and dimensions for each size from 5 to 35 ton capacity. Data are given on a 35-ton block that is only 39¾ in. high. Upson-Walton Co., 12535 Elmwood Ave., Cleveand 11, Ohio.

#### **Combination Tester**

A data sheet, TT-58, describes the Model TT TwinTester. This combination Rockwell and Rockwell Superficial hardness tester is for use in laboratories, tool departments, and job lot shops. Operating features, standard equipment, and optional accessories are listed. American Chain & Cable Co. Inc., 230 Park Ave., New York 17, N. Y.

### Refractory Castables

Information contained in the 24-page 'Mex-R-Co Refractory Castables' includes: A table of proper applications for 15 specialized castable refractory cements, information on anchoring castables, a chart for estimating quantity, mixing and placing instructions, and suggestions for pneumatic placement of castables. Mexico Refractories Co., Mexico, Mo.

## **Deep Throat Presses**

Bulletin No. 5 illustrates a line of leep throat, high speed presses. Dimenions and capacities of eight bench and loor model presses are given. Units ange in capacity from 4 to 60 tons with speeds of 90 to 195 strokes a minute. Design features include rolling key clutch, stress relieved construction, and extra long fibs. E. W. Bliss Co., Canton, Ohio.

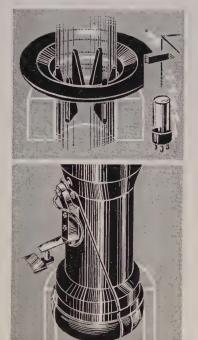
#### Immersible Motor

A 4-page bulletin, No. 2300, describes a motor used for submerged operation in water, chemicals, abrasive industrial oils, or sewage sumps. Louis Allis Co., 427 E. Stewart St., Milwaukee 1, Wis.

# How MICROHONING Provides Lower Cost— Consistent Accuracy—Maximum Production

Inherent characteristics of the Microhoning process are: rapid stock removal—generation of geometric and dimensional accuracy—ability to produce any desired functional surface finish. By using automatic Microsize controls, Microhoning's economies for precision processing can be fully utilized.

Today, there are several different types of automatic Microsize gages. The type best suited for individual applications can only be determined by considering the workpiece and processing factors. How automatic cycling of Microhoning machines is accomplished by using Microsize gages is indicated by the following typical examples:



# GAGE RING MICROSIZE

The gage ring, which is mounted above the workpiece, has an I.D. equal to required bore diameter. When bore has been Microhoned to size, plastic tabs on the abrasive sticks contact I.D. of gage ring causing it to turn. This movement triggers an air switch or an electronic pickup to initiate the ending of Microhoning cycle. Production-proved diametric accuracy on bores from .120" to 4" in diameter is .0003" or less.

# **EXPANDING GAGE MICROSIZE**

This gage reciprocates in synchronization with the Microhoning tool but is not attached to it. Entering the bore on every downstroke of the tool, the gage expands only at the bottom of each stroke. When gage expands to required bore diameter, two preset electrical contacts meet and initiate the ending of Microhoning cycle. There is no limit on maximum bore diameter that can be gaged—diametric accuracy held to .0003" or less.

To most efficiently meet each automatic sizing requirement, Micromatic employs a wealth of experience in the use of air, liquid, electronic and mechanical controls.

Please send me your movie "Protime for showing on	Engineer call.	(date).	PO SOLO THE COLOR TO THE COLOR
NAME			Play and
TITLE			
COMPANY			
STREET			
CITY	ZONE	STATE	к

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Acmexpedites your rush orders with RED
CIRCLE
SERVICE



HOT ROLLED STEEL IN COIL

HOT ROLLED PICKLED STEEL IN COIL

HOT ROLLED SHEETS

HOT ROLLED PICKLED SHEETS

COLD ROLLED STEEL IN COIL (Full Hard only)

COLD ROLLED SHEETS

ALLOY SHEETS AND PLATES

PLATES (5 16" and lighter)

**ELECTRICAL SHEETS** 

ELECTRIC WELD LINE PIPE

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NEWPORT, KENTUCKY

A SUBSIDIARY OF STEEL COMPANY

Acme-Newport's unusual flexibility of operation permits this special service for steel users pinched by short supplies. Rush orders for spot requirements are distinctly labeled with a bright red circle, giving them right of way through every department.

This efficient scheduling utilizes the inherent advantages of Acme-Newport's modern facilities, conscientious personnel, strategic location and 73 years of quality steelmaking. By producing mill orders to your exact specifications, with delivery where and when you want it, Red Circle alleviates the hazard of inventory depletion. Specify Red Circle for quick action!

# Market

May 26, 1958

# Outlook

# **Output Rises for Fourth Week**

RECOVERY in the steel industry is gaining momentum. Last week, the operating rate jumped 3 points to 54.5 per cent of capacity—the highest level of production since Mar. 2. Output was about 1,470,000 net tons of steel for ingots and castings.

Only four weeks ago, steelmaking was at its lowest level of the year. Since Apr. 27, the ingot rate has climbed more than 7 points and weekly production has increased by 200,000 tons.

If operations continue at the current rate, May production will reach 6 million tons, easily topping last month's 5.53 million. Steelmen expect further improvement in June.

WIDESPREAD GAINS— All but three districts reported better production last week. The biggest gains were scored in the Cincinnati, Detroit, and Buffalo areas. A southern Ohio mill is running at 70 per cent of capacity, its best rate in several months. At Detroit, Great Lakes Steel Corp. pushed operations up 10 points and Ford Motor Co. scheduled a 6.6 point rise. At Buffalo, Bethlehem Steel Co. relighted another open hearth. the fifth it has returned to production in the last two weeks.

**REASONS FOR PICKUP—** Industry observers attribute higher production to gains in demand (although less than seasonal) for construction products and scattered improvements in miscellaneous buying.

They also point out that inventories have been trimmed from 19 million tons on Jan. 1 to 13 million tons, a level at which some replacement buying can be expected. They say, too, that some consumers are hedging against a possible price increase on July 1.

JULY SLOWDOWN?—June production will top May figures by 2 or 3 per cent, some market analysts believe. They're less optimistic about July because: 1. Automakers will begin shutdowns for model changeovers. 2. Vacations will slow consumption in other industries. 3. Customers who bought heavily in June as a hedge against higher prices will be out of the market during July. If steelmaking slips, chances are it won't fall to the April level.

AUTOMAKERS CLOSE EARLY— It's believed that Detroit's Big Three will close their plants from one to three months earlier than usual to switch to '59 models. General Motors will probably start closing its assembly plants in July.

Chrysler will go down in late July or early August, and Ford will follow in September.

Despite reports that new car output will start with a bang, Detroit steelmakers think initial production rates won't be much greater than they are now. Big steel orders will come early this year, but releases will be staggered as automakers keep tabs on the cleanup of '58 models.

BETS ON FOURTH QUARTER—Charles M. White, Republic Steel Corp.'s chairman, expects the third quarter to bring little change in steel-making operations. Reason: The inventory correction in many industries will be continuing. "However," he adds, "the combination of a much improved inventory situation and normal seasonal patterns should result in better production in the fourth quarter."

MEMPHIS DECISION HURTS— Last November, a federal court ruled that the Federal Power Commission can't approve higher rates for natural gas transmission companies unless the increases are acceptable to the utilities that buy the gas. The decision delayed gas expansion programs costing Youngstown Sheet & Tube Co. a year's production of pipe, says J. L. Mauthe, chairman. Republic Steel Corp. shut its Gadsden, Ala., mill for two months, reopened it recently when line pipe orders were reinstated.

## WHERE TO FIND MARKETS & PRICES

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# 10 reasons why the Signode SFC is the savingest tool for strapping

- \$ With the SFC, one handle does the tensioning and the sealing. That's why one hand is free to align the straps and move the package. The SFC is the only one-hand seal feed tool. But that's not all.
- \$\text{You can put a cartridge of 50 Signode seals into the SFC magazine in a few seconds...as quickly as placing a loose seal on a strap. No seals wasted.
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- \$ The SFC will not operate unless the strap is properly aligned. In most seal feed tools misalignment wastes strap. It can't happen with the SFC.
- \$ Plenty of power...easily. The smooth-working SFC has a good long handle... straps directly from the dispenser. It's as good on big packages as on small ones.
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- The short base and centered balance of the SFC makes it easy to use on small packages, on cleats or other narrow surfaces, or on the edge of a box,
- The SFC can be used with the strap dispenser either in front or behind the operator—whichever fits your layout best.
- \$ With all its advantages, the SFC is the lowest cost seal feed tool on the market.



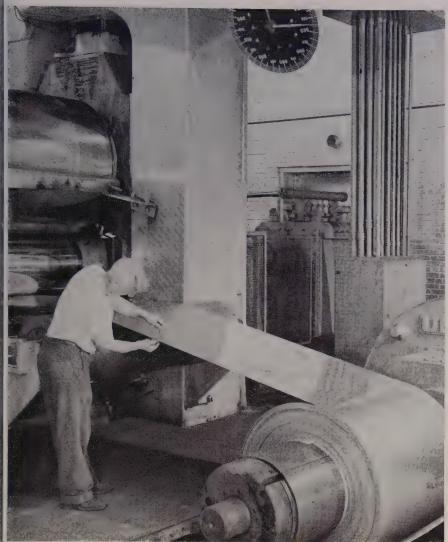
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Republic Steel Corp.

# Stainless Upturn Starting

Producers see early introduction of 1959 model autos as chief factor behind better sales outlook. Inventories are getting low. Prices will go up after July 1

STAINLESS STEEL producers are viewing the current slight uptrend in orders with a mixture of optimism and caution. They would like to see the trend strengthen, but until the automotive industry declares itself on use in 1959 models, the steelmen aren't throwing any parties to celebrate the recovery.

While you will find some disagreement among individual producers, most of them feel that the worst is over. Within the last four

to six weeks, the pace of incoming orders has quickened, although the majority of them have been on the small side for quick delivery. "We're getting some of the most fantastic orders today," exclaims one sales manager. "It's a sure indication that inventories are near rock bottom."

The Clues — If that's the case, then one of the two main factors in the downturn in sales can be expected to turn up any time now.

The second cause, automotive production, is less certain. Most producers tied closely to that industry say that inquiries point to early introduction of new models. Orders for test production runs are in now. But design is changing so fast that nobody can tell how much stainless is going to be used per car.

One report from Detroit indicates that a medium-priced car producer has changed a single trim part three times. First it was stainless, then aluminum, then stainless again. As of mid-April, the part was scrapped altogether, even though the tooling was completed.

Heavier Parts-Chances are good that the average use per car will increase a little, regardless of such changes. As one stainless producer puts it: "Often that which is thought of as competition between the two metals works to our mutual benefit. On Fords, for example, stainless strips are used to frame a gold anodized aluminum panel." Another producer feels that poundage per car will increase because auto producers are using heavier parts next year. Along with anticipated greater production of '59s, this could mean a pretty good year for stainless, starting in the fall.

While there is little activity from any of the stainless markets, few have been as lifeless as autodom. Captive markets, such as commercial kitchens and dairy and food machinery, are continuing to show long term growth. Appliance makers are turning to stainless more each year, but this is not yet a major market. Construction—mainly in curtain walls—is the fastest growing use, according to one producer. But it is still in its infancy.

Brighter Kitchens—One producer is enthusiastic about the future of stainless steel sinks. "There is stainless—20 lb of it—that can be put in every home at reasonable cost with great benefit to the housewife," he beams. "The replacement market is practically unlimited, and it is already becoming a factor. The new home market is gaining, too."

Aircraft use is down right now, but there are indications that it will gain strength within the next six months, both in planes and missiles.

Manufacturers of stainless wire appear to be better off than their counterparts in plates and sheets. Some even claim sales improvements

May 26, 1958

over 1958, and sales are on the increase.

Price Outlook—But the industry as a whole is operating at about 50 per cent of its capacity. This has caused some price shading on such things as packing and quantity extras, but the general price level has remained firm. Producers declare that they would like to hold at this level throughout the year, but they don't see how this will be possible after the new labor contract becomes effective on July 1.

(Some steelmakers say that price hedging has played a minor part in the present sales picture. One says it may account for 8 to 10 per cent of the current volume.)

Any increase will widen the price gap between aluminum and stainless (aluminum prices declined 2 cents a pound on Apr. 1), but stainless men feel this will not hurt their competitive position to any great extent. "We feel we have a quality product and that it must be sold on its merits" they say.

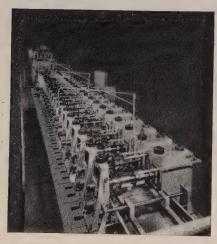
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# Stainless Steel . . .

Stainless Steel Prices, Page 165

Auto builders' orders for stainless steel are virtually nil. But other users are buying more actively, orders showing slight increases from week to week. One Detroit area producer says: "It looks like April was our low month, and while the pickup is slow, it will continue to increase."

Specialty steel sellers are searching for the last little run of small lot tonnage that the automakers will require to finish their 1958 model runs. Those should be trickling in through the rest of this month, and salesmen are out digging for the business.

Apparently, there is a lot of overoptimistic promising of quick delivery on those items, and also some price pressure.

# Sheets, Strip . . .

Sheet & Strip Prices, Pages 162 & 163

It looks like the automakers will place fair-sized orders for sheets and other steel products for their 1959 models in late June and early July. Releases, though, may be staggered until cleanup of 1958 model cars is assured. If all goes well, a rush of releases for late third quarter and early fourth quarter deliveries may flood the mills.

That about sums up thinking in the sheet market on automotive demand prospects. Current auto needs are relatively small. Only a trickle of orders is reported, but May volume will be slightly above April's, and still larger tonnage may come out for June shipment.

Last week, it was reported that Bethlehem's mill in the Buffalo area is getting a fair amount of business from foreign automobile manufacturers. It is said the mill currently is busier on sheet production for foreign cars than it is on production for domestic car manufacturers.

Orders on miscellaneous consuming account are heavier than they were a month ago. Volume for June shipment points to maintenance of this mild pickup. The bulk of buying is for prompt shipment, few consumers ordering in anticipation of a price hike at midyear. More users are placing small lots to fill in depleted inventories, though most of them hold back orders until

hey have signed contracts for their win finished products.

Some eastern stamping shops pooked slightly more volume for May-June, and, in addition to placing steel required for that period, are covering small July needs.

Seasonal requirements for galvanized sheets are reflected in fairly high mill operations. At Chicago, farm uses, bin and ductwork (air conditioning and heating) account or the bulk of demand. Corrugated heet is experiencing a strong searonal movement, reflecting farm puying for siding and roofing.

I The Navy Purchasing Office, Nashington, closes June 3 on 2500 cons of 18 gage, cold rolled sheets.

# Reinforcing Bars . . .

Reinforcing Bar Prices, Page 161

Rising building requirements are pushing reinforcing steel demand roward a seasonal peak. Numerous projects are up for bids, and awards are reported to be fairly active, particularly for highways, schools, and other public work.

Wire fabric and reinforcing wire nesh are getting quite a boost as highway proposals find their way hrough the maze of government red tape. This could turn into quite a little boom, come third quarter.

## Steel Bars . . .

Bar Prices, Page 161

"We're getting a lot of inquiries and a lot of small orders, but no better over-all sales volume," says a major bar producer at Pittsburgh.

His comment about describes the general market situation. Competition is increasingly sharp and expectations are that volume in both carbon and alloy grades will be slow until August-September.

While there has been a slight improvement in the number of carbon orders for June, the total is not impressive. The cold finishers are not operating much better than 50 per cent of capacity, and demand for cold-finished bars is ahead of that for hot-rolled.

The bar mills have reserves of billets and can maintain prompt shipment schedules on most carbon grades. Forge shops are buying close to their needs. Automotive demand is almost nil, and not much on auto account is expected until midsummer. No more bar tonnage

will be required for the 1958 model runs. Sales to farm implement makers are tapering, but they have been relatively substantial of late.

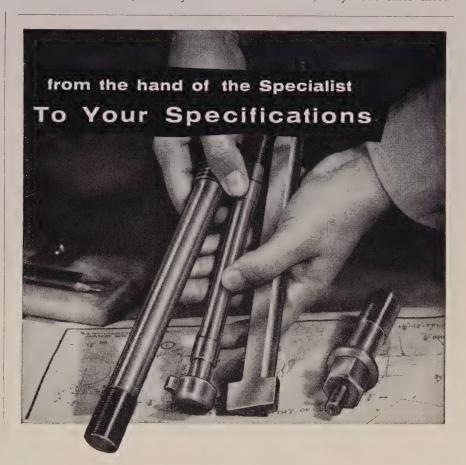
## Tool Steel . . .

Tool Steel Prices, Page 165

Tool steel sales are bumping along on a level that's slightly above the lowest of the year. After a slight pickup in March, bookings have leveled off. Producers think their customers have adjusted production to current demand, so they don't expect any weakening in sales. Chances for an upturn before fall are considered remote, though.

One seller says his May entry pattern is better than April's, but he doubts the improvement has any significance. Diemakers who depend on automotive orders have made their big purchases of tool steel for the 1959 models. They'll be out of the market until the 1960 programs are released.

"The aircraft industry is pretty well tooled," says one sales execu-



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tive, "but there's a lot of interest t in the production items.'

Diemakers who supply the appliance industry report slightly improved sales.

## Tin Plate . . .

Tin Plate Prices, Page 163

Production of tin plate is at capacity and is likely to continue that pace for some time. Bookings are ahead of those a month ago. Whether this reflects hedge buying against a possible price increase July 1 is uncertain. The mills are not commenting about prices and there is some question they will tip their hand by making known their position on tin plate before late June.

Electrolytic tin plate with a differential coating of .75 lb-.25 lb of tin plate per base box is now included in the tin mill products made by Weirton Steel Co., Weirton, W. Va. It is priced at \$9.30 per base box, f.o.b. mill.

## Tubular Goods .

Tubular Goods Prices, Page 165

Change in the tubular goods market situation in the last week has Demand continues been slight. sluggish, though some improvement in the movement of standard pipe is attending the seasonal pickup in construction activities.

"Standard pipe sales will be as good this month as last," a Pittsburgh mill reports.

Shipments are down from last year's level, but they're up considerably from those in first quarter, 1958. Heating and plumbing industries are providing support.

"Our sales volume in pressure and mechanical tubing is only 45 per cent of what it was a year ago," says another Pittsburgh producer. "We hit a low point in December or January, but while demand has bottomed out, there has been no appreciable improvement. Because of our big backlog, we've been able to ship about 70 per cent of last year's tonnage. But we're shipping stuff that we sold two years ago. Oil refineries and boiler manufacturers are still buying at a good rate."

Mechanical tubing sales are depressed because of weak automotive demand. Automakers' inventories are so low that orders are being placed on a "ship tomorrow" pasis. On the West Coast, May hipments of mechanical tubing are expected to slightly better those in April.

prii.

The oil industry continues to truggle in its own particular recesion. The Texas oil production alowable for June has been set at 2,479,174 barrels daily, an increase of 42,603 barrels a day over the May allowable. Production will be tept on an eight-day basis this nonth.

A. M. Byers Co., Pittsburgh, has booked a \$310,000 Navy order for 759 tons of  $\frac{1}{2}$  to 10 in. wrought ron pipe.

# Plates . . .

Plate Prices, Page 161

Storage tank plate tonnage is neavier in the East and, with ship-/ard demand, accounts for a mild ncrease in over-all requirements.

Alco Products Inc., diesel locomotive shop, Schenectady, N. Y., is working two shifts, one of the few ailroad suppliers relatively active. Better than 80 per cent of its activity is on production of equipment for export. The diesel rebuilding program is also beginning to gain momentum. Many of the early diesels are ready for replacement, and Alco is rebuilding with a new unit guarantee after 12 to 15 years' service.

The U. S. Bureau of Reclamation, Denver, is taking estimates on close to 15,000 tons of plates for penstocks and large diameter outlet

Many plate shops are operating with small backlogs, including weldments. They are diversifying work and estimating more tonnage but holding off purchases of plates until contracts are signed. They then ask for prompt shipments. Shops using the lighter gages are drawing on inventory for the bulk of their needs.

"We're not going to buy any plates in anticipation of a price hike July 1," says a Pittsburgh fabricator. "We lose more by tieing up our liquid assets and getting stuck with odd lengths and widths than we could gain by hedging."

A mill equipment maker reports a "normal" plate inventory of about 1000 tons. It began the year with a subtantial order backlog, but reports shipments are tapering. With

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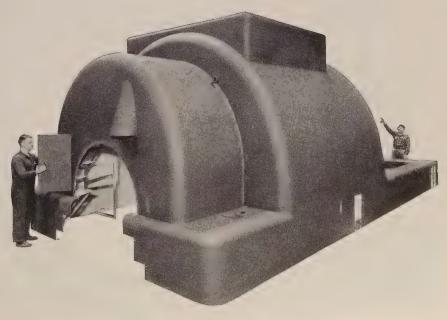
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ALUMINUM AND ALLOY FABRICATION

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FABRICATION



# **Columbia produces** 250 bicycle forks per hour with automatic

GAS brazing fork manufacture, also. American Gas Association.

Gas brazing is not new to Westfield, where Columbia bicycle frames have been brazed with Gas-fired Selas processing equipment for many years. During this time, pre-placing of brass filler material and automatic heating have limited dependence on operator skill, reduced material waste, and eliminated costly cleanup operations. With the installation of the new Gas brazing machine in their production operation, these advantages have been extended to include

For information on how Gas equipment can help you in your production operations, call your Gas Company's industrial specialist. He'll be glad to discuss the economies and outstanding results you'll get with Gas and modern Gas equipment.

> Two fork styles in all standard bicycle sizes are joined from eight steel components on this new automatic Selas machine by Westfield Manufacturing Co., Westfield, Mass. Controlled combustion and flame geometry bring the parts to brazing temperature of 1750°F in only 86 seconds, using economical Gas equipment.

the steel mills operating only a few points over 50 per cent of capacity, the market for ladles and cars is virtually dead.

An estimated 16,000 tons of plates are required for four cargo vessels, Lykes Bros. Steamship Co., closing June 19 with the Federal Maritime Board.

# **Cuts Some Export Prices**

Export base prices on several steel products were reduced by the U. S. Steel Export Co., New York, as of May 14. Hot-rolled sheets (18-gage and heavier) were reduced to \$5.01 from \$5.14 per 100 lb; cold-rolled sheets, to \$6.22 from \$6.49; concrete reinforcing bars, \$5.51 from \$5.87.

The reductions, the company explains, bring its export prices in line with domestic delivered quotations at seaboard and should enable it to distribute the products more effectively abroad.

# Pig Iron . . .

Pig Iron Prices, Page 166

Optimism has been generated in the foundry industry by the current pickup in steel ingot production. Inquiry for castings is also increasing, but thus far there has been no substantial gain in bookings. Most foundrymen feel that a slight improvement will develop through June, followed by a lag in the July-August period and a substantial recovery over the balance of the year.

Foundries are operating at only 50 to 60 per cent of capacity (generally three or four days a week with some down to two days). As a result, demand for merchant iron is light.

## Iron Ore . . .

Iron Ore Prices, Page 167

As of May 15, only 85 of the lake iron ore fleet of 250 vessels were in commission. It compares with 251 vessels, 100 per cent, in commission on the like date last year.

The first Pittsburgh Steamship Div. (U. S. Steel) vessel to carry a cargo of Lake Superior iron ore during the 1958 navigation season was the Cason J. Calloway. This ship left its winter berth at Milwaukee May 13 and two days later loaded ore at Two Harbors, Minn., for delivery at Gary, Ind., May 18.

## Warehouse . . .

Warehouse Prices, Page 166

Pepped-up construction activity and steady demand from small fabricating firms have improved sales by warehouses. Users, having reduced their inventories, are buying only for immediate needs because of the easy availability of most items.

Heavier shipments to distributors have brightened the production picture, espiecially for hot and cold rolled bars, sheets, and structural shapes. Part of the heavier buying from mills is to bolster stocks of some products which had been allowed to fall too low.

Stiff competition is exerting a strong pressure on prices. Much of the price cutting in the Southwest, for instance, has been done by small distributors and importers.

# Rare Earth Prices Cut

Prices of many rare earth oxides and salts have been reduced 40 to 90 per cent by Nuclear Corp. of America Inc., Burbank, Calif., refiner of scarce materials. The cuts were made possible by increased

The sharpest reduction was in the price of 99 per cent pure lutetium oxide-from \$150 per gram to \$15. High purity oxides of thulium, europium, and neodymium fell 80 to 85 per cent. Most of the other sharp reductions were in prices of "medium" lots (100 to 1000 grams).

Nuclear Corp. also announced that terbium oxide and holmium oxide (99.8 per cent pure) are now available. Previously, only 98 per cent purity material could be guaranteed.

# Semifinished Steel . . .

Semifinished Prices, Page 161

Stronger demand for steel, especially building products such as structurals and reinforcing, is pushing up steelmaking operations. The national ingot rate last week jumped three points to 54.5 per cent of capacity, highest level attained since January.

Further rise in the rate is anticipated over coming weeks. It looks like even Detroit area mills will put on more furnaces despite sluggishness in the auto industry. Great



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Lakes Steel Corp. is expected to reactivate 10 furnaces. Ford also is expected to add to its active units.

At Buffalo, four open hearths were added to the active list by Bethlehem Steel. Inland Steel at Chicago is operating at nearly 82 per cent of capacity, up 10 points from its average of recent weeks. Granite City Steel Co., Granite City, Ill., is operating five of its seven furnaces. Last month, it averaged about four furnaces.

Bethlehem Pacific Coast Steel Corp.'s Seattle plant is operating at 76 per cent of capacity. One new electric furnace is in operation. A second will be added

later.

# Structural Shapes . . .

Structural Shape Prices, Page 161

Structural fabricators are reducing their inventories at a faster pace, and more of them are entering new orders on steel mill books to meet the increase in their new bookings.

Bridges account for the bulk of the current bulge in structural estimating. Commercial building is off, though a fair volume is reported in New York City. An increasing number of shops that are estimating bridge tonnage have reduced backlogs of building work.

Distribution of tonnage among fabricators is broader and competition tends to keep prices down. It is a long time since bids for jobs in the Midwest have been submitted on such a low profit margin basis.

The seasonal betterment in construction steel requirements is being reflected in rising ingot production.

#### STRUCTURAL SHAPES . . .

#### STRUCTURAL STEEL PLACED

6550 tons, U. S. and Canadian approach superstructures, international suspension bridge, St. Lawrence River, Ogdensburg, N. Y.-Greenville, Ont., to Dominion Structural Steel Ltd., Montreal, Que.; project, two contracts, includes 12 truss spans, three 3-span continuous girders and two 4-span continuous girders, the latter 510 ft each; 4900 tons, 2150-ft bridge superstructure, American Bridge Div., U. S. Steel Corp., Pittsburgh. American

3100 tons, construction trestle, St. Lawrence Seaway project, Lewiston, N. Y., to the Ernst Iron Works, Buffalo; Merritt-Chapman

& Scott Corp., general contractor. 3000 tons, Hangar 17, Idlewild Airport, Port of New York Authority, to White Plains Iron Works, White Plains, N. Y.; direct

1020 tons, 20-story apartment, 319-32 E. 46th St., New York, to Grand Iron Works, New York; through Elk Realty Inc., New York.

70 tons, superstructure, east bridge, Fresh Kills, Staten Island, N. Y., to Harris Struc-tural Steel Co., New York; Woodcrest Construction Co., New York, general contractor.

630 tons, state highway bridges, Erie Thruway, Fairview-McKean Townships, Pennsylvania, to the Levinson Steel Co., Pittsburgh; Fred W. Ewing Inc., Corry, Pa., general contractor

500 tons, furnace supports, power station, Trenton, N. J., to Belmont Iron Works, Philadelphia; Foster-Wheeler Corp., New power station, Corp., New

York, general contractor.

435 tons, beam spans, four bridges, Haven, Conn., to McDermott Steel Co., New Haven; Mariana Construction Co., New Haven, general contractor; 3215 tons, girder

Haven, general contractor; 3215 tons, girder spans, to American Bridge Div., U. S. Steel Corp., Pittsburgh (STEEL, May 19).
380 tons, library, Harper College, Vestal, N. Y., to Bethlehem Fabricators Inc., Bethlehem, Pa; Foster-Newman Construction Co., New York, general contractor.
350 tons, high school, Anchorage, Alaska, to the Isaacson Iron Works, Seattle; Warrack Construction Co., general contractor.
320 tons, highway bridge, Grays Harbor County, Washington State, to the United Concrete Pipe Corp., Auburn, Wash.; Harry H. Hawkins, Seattle, general contractor.

H. Hawkins, Seattle, general contractor.

245 tons, 152-ft state bridge, Highway 80 over
Broadway, Bangor, Maine, to Bancroft &
Martin Rolling Mills Co., South Portland,
Maine; H. B. Fleming Inc., South Portland, general contractor.

tons, hospital addition, Danbury, Conn., to Topper & Griggs (Bethlehem Fabricators Inc.), West Hartford, Conn.; E. & F. Construction Co., Bridgeport, Conn., general

#### STRUCTURAL STEEL PENDING

3200 tons, highway structure, Harlem River Drive, Cont. 145A, West 145th Street to Seventh Avenue, New York; bids June 5 to Albany, N. Y.

900 tons, twin 968-ft Oregon highway bridges, Snake River; general contract to Hansen & Parr Construction Co., Spokane, Wash., low at \$952,650.

6000 tons, 37-story office building, Equitable Life Assurance Society, Avenue of the Amer-icas, 51st and 52nd Streets, New York; Turner Construction Co., New York, general contractor.

contractor.

3000 tons, galvanized tower steel; bids to Bonneville Power Administration, Portland, Oreg., June 11; Spec. No. 8768.

2090 tons, five state bridges, including three bids to

composite I-beams, one railroad I-beam, and one (586 ft) girder-composite I-beam, Romed N. Y.; bids June 5 to Albany, N. Y.

700 tons, four highway grade separation struccomposite I-beams, interstate route 502, Sec. 2 (Latham to Mohawk River) Albany, N. Y.

470 tons, two composite WF beam, four-spans each, and one 4-span welded plate girder, highway grade separations, Sunrise Highway extension, contract 1, Suffolk County, Nev York; bids June 5 to Albany, N.

375 tons, highway grade separation structure, Enfield, Conn.; bids June 2, to Hartford, Conn.

300 tons plus, twin, 981-ft Idaho State bridges, Minidoka County; W. R. Cahoon Construction Co., Pocatello, Idaho, low at \$435,811.

300 tons, single plate girder span, grade separation over the New Y railroad York Central, Brewster-Carmel, Putnam County, New

Maine; I-beam bridge, Augusta, 140 tons. also 75 tons of reinforcing bars; bids in.

#### REINFORCING BARS . .

#### REINFORCING BARS PLACED

1445 tons, plate girder I-beam bridge, also five I-beam bridges, Harrisburg, Pa., to Joseph T. Ryerson & Son Inc., Philadelphia; Ber-lanti Construction Co., Harrison, N. Y., general contractor; 130 tons, steel highway general contractor; 130 tons, steel highway mesh, to the Bethlehem Steel Co., Bethlehem, Pa.; also 4850 tons, fabricated structural steel, to the Harris Structural Steel Co., New York (Steel, 5/19/58). 10,000 tons or more, three phases, Lloyd Center, Portland, Oreg., reported placed with the Soule Steel Co. and Mercer Steel

Portland.

615 tons, one railroad and three grade cross-615 tons, one railroad and three grade crossing structures, New Haven, Conn., to the Bethlehem Steel Co., Bethlehem, Pa.; Mariani Construction Co., New Haven, general contractor; 300 tons, steel piles, to C. W. Blakeslee & Sons, New Haven. 610 tons, plant and science building, Washington State College, Pullman, Wash., to the Northwest Steel Rolling Mills Inc., Seattle; Johnson, Busbaum & Rauh, Spokane Wash., general contractor. 330 tons, highway bridge, Gravs Harbor

30 tons, highway bridge, Grays Harbor County, Washington State, to the James D. English Co., Tacoma, Wash.; Harry H. Hawkins, Seattle, general contractor.

## DISTRICT INGOT RATES

(Percentage of Capacity Engaged)

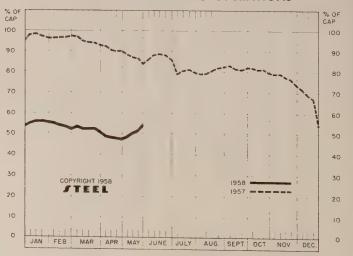
	Wee	k Ended			Same	Week
	Me	by 25	Cho	inge	1957	1956
Pittsburgh		52	_	1.5	90	99
Chicago		60	+	4.5*	88	101
Mid-Atlantic		49	+	0.5	94	98.5
Youngstown		45		0	81	101
Wheeling		73.5	-1	2.5	84.5	101
Cleveland		30.5	1	4.5	84	99
Buffalo		44	+	5	52.5	105
Birmingham		67	+	0.5	92.5	23.5
New England .		40		0	56	89
Cincinnati		62	+	9.5*	80	94
St. Louis		78.5	7	1.5	84.5	99
Detroit		44.5	+	7*	80.5	93.5
Western		67		0	100	107
National Rate		54.5	+	3	84	96.5

#### INGOT PRODUCTION\$

'	Neek Ended May 25	Week Ago	Month Ago	Year Ago
INDEX	. 92.2†	87.9	79.1	137.7
NET TONS (In thousands)	. 1,481†	1,412	1,270	2,212

\*Change from preceding week's revised rate. †Estimated. ‡American Iron & Steel Institute Weekly capacity (net tons): 2,699,173 in 1958; 2,559,490 in 1957; 2,461,893 in 1956.

#### NATIONAL STEELWORKS OPERATIONS



#### **Price Indexes and Composites** FINISHED STEEL PRICE INDEX (Bureau of Labor Statistics) 190 190 (1947-49=100) 180 180 170 170 160 160 1958 - By Weeks 150 140 140 130 130 120 1952 1954 120 1955 1956 JAN FEB MAR. APR. MAY May 20, 1957 Week Ago Month Ago Year Ago 181.7 181.7 181.6 181.6 174.4

### AVERAGE PRICES OF STEEL (Bureau of Labor Statistics)

Week Ended May 20

Prices include mill base prices and typical extras and deductions. Units are 100 lb except where otherwise noted in parentheses. For complete description of the following products and extras and deductions applicable to them, write to STEEL.

Rails, Standard No. 1 Rails, Light, 40 lb	\$5.600 7.067	Bars, Reinforcing Bars, C.F., Carbon	6.135 10.360
Tie Plates	6.600	Bars, C.F., Carbon	13.875
Axles, Railway	9.825	Bars, C.F., Stainless, 302	10.010
Wheels, Freight Car, 33	01020	(lb)	0.553
in. (per wheel)	60.000	Sheets, H.R., Carbon	6.192
Plates, Carbon	6.150	Sheets, C.R., Carbon	7.089
Structural Shapes	5.942	Sheets, Galvanized	8.270
Bars, Tool Steel, Carbon		Sheets, C.R., Stainless, 302	
(lb)	0.535	(lb)	0.688
Bars, Tool Steel, Alloy, Oil		Sheets, Electrical	12.025
Hardening Die (lb)	0.650	Strip, C.R., Carbon	9.243
Bars, Tool Steel, H.R.,		Strip, C.R., Stainless, 430	
Alloy, High Speed, W		(lb)	0.493
6.75, Cr 4.5, V 2.1, Mo		Strip, H.R., Carbon	6.095
5.5, C 0.60 (lb)	1.355	Pipe, Black, Buttweld (100	
Bars, Tool Steel, H.R.,		_ft)	19.814
Alloy, High Speed, W18,		Pipe, Galv., Buttweld (100	00.004
Cr 4, V 1 (lb)	1.850	ft)	23.264
Bars, H.R., Alloy	10.525		199.023
Bars, H.R., Stainless, 303		Casing, Oil Well, Carbon	194.499
(lb)	0.525	(100 ft)	132.133
Bars, H.R., Carbon	6.425	(100 ft)	304 610
Louis, Lates, Calbul	0.720	(100 20)	002,320

#### STEEL'S FINISHED STEEL PRICE INDEX\*

	May 21 1958	Week Ago	Month Ago	Year Ago	5 Yr Ago
Index (1935-39 avg=100).	239.15	239.15	239.15	228.59	182.82
Index in cents per lb	6.479	6.479	6.479	6.193	4.953

#### STEEL'S ARITHMETICAL PRICE COMPOSITES\*

Finished Steel, NT	\$145.42	\$145.42	\$145.42	\$140.24	\$111.28
No. 2 Fdry Pig Iron, GT	66.49	66.49	66.49	64.70	55.04
Basic Pig Iron, GT	65.99	65.99	65.99	64.23	54.66
Malleable Pig Iron, GT	67.27	67.27	67.27	65.77	55.77
Steelmaking Scrap, GT	33.50	32.83	32.83	46.67	39.00

<sup>\*</sup>For explanation of weighted index see Steel, Sept. 19, 1949, p. 54; of arithmetical price composite, Steel, Sept. 1, 1952, p. 130.

# **Comparison of Prices**

Comparative prices by districts, in cents per pound except as otherwise noted. Delivered prices based on nearest production point.

EINICHED CTEEL	May 21	Week	Month	Year	5 Yr
FINISHED STEEL	1958	Ago	Ago	Ago	Ago
Bars, H.R., Pittsburgh	5.425	5.425	5.425	5.075	3.95
Bars, H.R., Chicago	5.425	5.425	5.425	5.075	3.95
Bars, H.R., deld. Philadelphia		5.725	5.725	5.365	4.502
Bars, C.F., Pittsburgh		7.30*	7.30*	6.85*	4.925
Shapes, Std., Pittsburgh		5.275	5.275	5.00	3.85
Shapes, Std., Chicago		5.275 5.545	5.275 5.545	5.00 5.31	3.85 4.13
Shapes, deld., Philadelphia .		5.10	5.10	4.85	3.90
Plates, Pittsburgh		5.10	5.10	4.85	3.90
Plates, Chicago		5.10	5.10	5.25	4.35
Plates, Sparrows Point, Md.		5.10	5.10	4.85	3.90
Plates, Claymont, Del	5.10	5.10	5.10	5.70	4.35
Sheets, H.R., Pittsburgh	4.925	4.925	4.925	4.675	3.775
Sheets, H.R., Chicago		4.925	4.925	4.675	3.775
Sheets, C.R., Pittsburgh		6.05 6.05	6.05 6.05	5.75 5.75	4.575 4.575
Sheets, C.R., Chicago Sheets, C.R., Detroit				5.75-5.85	
Sheets, Galv., Pittsburgh		6.60	6.60	6.30	5.075
Strip, H.R., Pittsburgh		4.925	4.925	4.675 3.97	5-4.225
Strip, H.R., Chicago		4.925	4.925	4.675	3.725
Strip, C.R., Pittsburgh	7.15	7.15	7.15	6.85 5.	
Strip, C.R., Chicago		7.15	7.15		5.35 30-6.05
Strip, C.R., Detroit		7.25	7.25		
Wire, Basic, Pittsburgh		7.65	****	7.20 5.22	
Nails, Wire, Pittsburgh	8.95	8.95	8.95	8.49	6.35
Tin plate (1.50 lb) box. Pitts.	\$10.30	\$10.30	\$10.30	\$10.30	\$8.95

\*Including 0.35c for special quality,

### SEMIFINISHED STEEL

Billet Wire	s, forging, rods, 7/3-5/	Pitts.	(NT) s	\$96.00 6.15	\$96.00 6.15	\$91.50 5.80	

PIG IRON, Gross Ton	May 21 1958	Week Ago	Month Ago	Year Ago	5 Yr Ago
Bessemer, Pitts	\$67.00	\$67.00	\$67.00	\$65.50	\$55.50
Basic, Valley	66.00	66.00	66.00	64.50	54.50
Basic, deld., Phila	70.41	70.41	70.41	68.38	59.25
No 2 Fdry, NevilleIsland, Pa.	66.50	66.50	66.50	65.00	55.00
No. 2 Fdry, Chicago	66.50	66.50	66.50	65.00	55.00
No. 2 Fdry, deld., Phila	70.91	70.91	70.91	68.88	59.75
No. 2 Fdry, Birm	62.50	62.50	62.50	59.00	51.38
No. 2 Fdry (Birm.) deld. Cin.	70.20	70.20	70.20	66.70	58.93
Malleable, Valley	66.50	66.50	66.50	65.00	55.00
Malleable, Chicago	66.50	66.50	66.50	65.00	55.00
Ferromanganese, net ton	$245.00\dagger$	245.00†	$245.00\dagger$	255.00†	200.00*

†74-76% Mn, Duquesne, Pa. \*Etna, Pa.

## SCRAP, Gross Ton (Including broker's commission)

TNTO	4	Haavv	Malt	Pittsburgh	\$32.50	\$31.50	\$32.50	\$44.50	\$39.50
		_		E. Pa	34.50	34.50	36.00	52.00	41.50
					33.50	32.50	30.00	42.50	36.00
				, Chicago.					
				Valley	36.50	33.50	32.50	43.50	41.50
		-		Cleve	33.00	30.50	29.50	38.50	39.00
				Buffalo	26.50	26.50	26.50	40.50	41.75
Rail	s,	Rerolli	ng, C	hicago	51.50	50.50	52.00	61.50	47.50
No.	1	Cast,	Chica	go	40.50	38.50	38.50	42.50	39.50

## COKE, Net Ton

Beehive, Furn., Connisvi.		\$15.25	<b>\$</b> 15.25	\$15.25	\$15.25	\$14.75
Beehive, Fdry., Connlsvi	l	18.25	18.25	18.25	18.00	17.00

May 26, 1958



# TUBING PROBLEMS?

Get help in less than 24 hours from

# BISHOP'S QUICK SERVICE TEAM\*

Don't let tubing problems delay your operations! When you need help in a hurry, call in Bishop—manufacturers of *unexcelled* quality tubing. Within 24 hours Bishop's Quick Service Team (QST) will go into action to provide expert assistance on your specific problems.

What is this Quick Service Team? It's a corps of metallurgists and specialists who will provide *sound*, sure advice . . . qualified men in sales who *know* tubing, are pledged to give *fast* reliable service . . . and production experts who will push your job through for *quickest* possible delivery.

BRIEFLY, THE BISHOP LINE ...

STAINLESS STEEL TUBING Seamless, Welded & Drawn	Mechanical, Aircraft, Capillary, Hypodermic also NEW Stabilized and L grades, precipitation hardening alloys	0.008" to 1.000" OD 0.003" to 0.083" wall				
NICKEL & NICKEL ALLOY TUBING	All standard grades	up to 1.000" OD 0.065" wall max				
TUBULAR FABRICATED PARTS	Flanged, flared, milled, slotted, swaged, threaded					
GLASS-TO-METAL SEALING ALLOYS	Low expansion alloys for glass sealing applications					
CLAD METALS & COMPOSITE WIRES	Base metals & precious metals	in various combinations.				
PLATINUM GROUP METALS   Fabricated products—chemicals						
CATALOGS, DATA SHEETS ON THE ABOVE SENT PROMPTLY ON REQUEST						

Get help in a hurry—start the Quick Service Team working for you. Contact Bishop by phone: Malvern 3100, by TWX: Malvern 570, or call your local steel warehouse.



Tubular Products Division



# J. BISHOP & CO.

platinum works

MALVERN, PENNSYLVANIA

CEL	41		N.E			
SEA	ин	FI	N	15	ш	ED

Munhall, Pa. U5\$73.	) 50
INGOTS, Alloy (NT)	
Detroit S41\$77. Farrell, Pa. S377.	nn
Lowellville, O. S3 77. Midland, Pa. C18 77.	nn
Munhall, Pa. U577.	ดด
Sharon, Pa. 8377.	00

THE SECOND
Carbon, Rerolling (NT)
Bessemer, Pa. U5\$77.50
Buffalo R277.50
Clairton, Pa. U577.50
Ensley, Ala. T277.50
Fairfield Ale mo
Fairfield, Ala. T277.50
Fontana, Calif. K188.00
Gary.Ind. U577.50
Johnstown, Pa. B377.50
Lackawanna, N.Y. B2 77.50
Munhall, Pa. U577.50
Owensboro, Ky. G877.50
Chicago III Do Tes
S.Chicago, Ill. R2, U577.50
S. Duquesne, Pa. U577.50
Sterling. Ill. N15 77.50
Youngstown R277.50

# Carbon, Forging (NT) Bessemer. Pa. U5 ... \$96.00 Buffalo R2 ... 96.00 Canton.O. R2 ... 98.50 Clairton.Pa. U5 ... 96.00 Conshohocken.Pa. A3 ... 101.00

Constitution As 101.00
Ensley.Ala. T296.00
Fairfield, Ala. T296.00
Fontana, Calif. K1 105.50
Gary, Ind. U596.00
Geneva, Utah C1196.00
Houston S5101.00
Johnstown, Pa. B296.00
Lackawanna, N.Y. B2 96.00
Los Angeles B3105.50
Midland.Pa. C1896.00
Munhall, Pa. U596.00
Owensboro, Ky. G896.00
Seattle B3109.50
Sharon, Pa. S396.00
S.Chicago R2, U5 W14.96.00
S. Duquesne, Pa. U596.00
S.SanFrancisco B3105.50
Warren.O. C1796.00

# Warren, O. C17 ... 96.00 Alloy, Forging (NT) Bethlehem, Pa. B2 ... \$114.00 Brifgeport, Conn. C32.114.00 Buffalo R2 ... 114.00 Canton, O. R2, T7 ... 114.00 Conshohocken, Pa. A3 ... 121.00 Detroit S41 ... 114.00 Economy, Pa. B14 ... 114.00 Farrell, Pa. S3 ... 114.00 Fontana, Calif. K1 ... 135.00 Gary, Ind. U5 ... 114.00 Houston S5 ... 119.00 Ind. Harbor, Ind. Y1 ... 14.00 Johnstown, Pa. B2 ... 114.00 Lackawanna, N. Y. B2.114.00 Lackawanna, N. Y. B2.114.00

Lackawanna, N. 1. B2.114.00
LosAngeles B3134.00
Lowellville, O. S3 114.00
Massillon, O. R2 114.00
Midland, Pa. C18 114.09
Munhall.Pa. U5114.00
Owenshoro, Kv. G8114.00
Sharon, Pa. S3 114.00
S.Chicago R2, U5, W14 .114.00
S. Duquesne, Pa. U5 114.00
Struthers, O. Y1114.00
Warren, O. C17114.00
Walten, O. O. 11111111111111111111111111111111

ROUNDS,				
Buffalo	R2 .		\$11	7.50
Canton, O	. R2		12	0.00
Cleveland	R2		11	7.50
Gary, Ind.	U5		11	7.50
S. Chicago	), Ill. F	22. W	714 11	7.50
S. Duques	ne, Pa.	U5	11	7.50
Warren, O	. C17		11	7.50

SKELP

Aliquippa, Pa. J5	5.075
Munhall, Pa. U5	4.875
Pittsburgh J5	5.075
Warren, O. R2	4.875
Youngstown R2, U5	4.875
,	
WIRE RODS	
AlabamaCity, Ala. R2	
Aliquippa, Pa. J5	.6.15
Alton, Ill. L1	.6.35
Buffalo W12	
Cleveland A7	

# Cleveland A7 6.15 Donora,Pa. A7 6.15 Fairfield,Ala. T2 6.15 Houston S5 6.40 Indiana Harbor,Ind. Y1 6.15 Johnstown, Pa. B2 6.15 Joliet,Ill. A7 6.15 Kokomo,Ind. C16 6.25 Los Angeles B3 6.95 Minnequa, Colo. C10 6.40

36
Monessen, Pa. P76.1
N. Tonawanda, N. Y. B11.6.1
Pittsburg, Calif. C116.9
Portsmouth, O. P126.1
Roebling, N.J. R56.2
S.Chicago, Ill. R26.1
SparrowsPoint, Md. B2. 6.2
Sterling, Ill. (1) N156.1
Sterling, Ill. N156.2
Struthers, O. Y16.1
Worcester, Mass. A76.4
CTRUCTURALC

SINUCIONAL	.3
Carbon Steel Std. She AlabamaCity, Ala. R2.	apes
AlabamaCity, Ala. R2.	.5.2
Atlanta All	.5.47
Aliquippa, Pa. J5	.5.27
Atlanta A11 J5 Bessemer, Ala. T2 Bethlehem, Pa. B2	.5.27
Bethlehem, Pa. B2	.5.32
Birmingnam Clb	.5.27
Clairton, Pa. 115	5 27
Fairfield, Ala. T2	.5.27
Fairfield, Ala. T2 Fontana, Calif. K1	.6.07
Gary, Ind. U5	.5.27
Gary, Ind. U5 Geneva, Utah C11	.5.27
Houston S5 Ind. Harbor, Ind. I-2 .	.5.37
Ind. Harbor, Ind. I-2 .	.5.27
Johnstown Pa R2	5 32
Joliet, Ill. P22	.5.27
Joliet, Ill. P22 Kansas City, Mo. S5 Lackawanna, N.Y. B2	.5.37
Lackawanna, N.Y. B2	5.32
LosAngeles B3	.5.97
Minnequa, Colo. C10	.5.57
Munhall, Pa. U5 Niles, Calif. P1	.5.27
Niles, Calif. P1	.5.92
Phoenixville, Pa. P4	.5.32
Portland, Oreg. 04	.6.02
Seattle B3 S.Chicago, Ill. U5 W14	.6.02
S.Chicago, Ill. U5 W14	5.27
S.SanFrancisco B3	.5.92
Sterling, Ill. N15	.5.27
Torrance, Calif. C11 Weirton, W. Va. W6	.5.97
weirton, w. Va. W6	.5.27
Wide Flange	
Pathloham Do Do	F 00

Wide Flange	
Bethlehem, Pa. B2	5.32
Clairton, Pa. U5	
Fontana, Calif. K1	6.22
Indiana Harbor, Ind. I-2.	5.27
Lackawanna, N.Y. B2	5.32
Munhall, Pa. U5	5.275
Phoenixville, Pa. P4	5.32
S.Chicago, Ill. U5	5.275
Weirton, W. Va. W6	5.275
411	

Alloy Std. Shapes	
Aliquippa.Pa. J56	.5
Clairton, Pa. U56	.58
Gary, Ind. U56	.5
Houston S56	. 6
KansasCity, Mo. S56	. 65
Munhall, Pa. U56	
S.Chicago, Ill. U56	
H.S., L.A. Std. Shapes	
Aliquinna Pa I5 7	70

Aliquippa, Pa. Jo
Bessemer, Ala. T27.75
Bethlehem, Pa. B27.80
Clairton, Pa. U57.75
Fairfield, Ala. T27.75
Fontana, Calif. K18.55
Gary, Ind. U57.75
Geneva, Utah C117.75
Houston S57.85
Ind. Harbor, Ind. I-2, Y1 7.75
Johnstown, Pa. B27.80
KansasCity, Mo. S57.85
Lackawanna, N.Y. B2 7.80
LosAngeles B38.45
Munhall.Pa. U57.75
Seattle B38.50
S.Chicago, Ill. U5, W14 7.75
S.SanFrancisco B38.40
Struthers, O. Y17.75

H.S., L.A.	Wide	Flan	ge
Bethlehem, Pa			
Munhall, Pa.	U5 .		.7.75
S. Chicago, Ill.	U5		.7.75

#### PILING

BEARING PILES Bethlehem,Pa. B25.325 Lackawanna,N.Y. B2 .5.325 Munhall,Pa. U55.275 S.Chicago,Ill. U55.275
STEEL SHEET PILING           Lackawanna, N.Y. B2 6.225           Munhall, Pa. U5 6.225           S.Chicago, Ill. U5 6.225           Weirton, W. Va. W6 6.225

## PLATES

IMAIL
PLATES, Carbon Steel
AlabamaCity, Ala. R25.10
Aliquippa, Pa. J55.10
Ashland, Ky. (15) A105.10
Atlanta A115.30
Bessemer, Ala. T25.10
Clairton, Pa. U55.10
Claymont.Del. C225.10

Cieveland Jo, R25.2	0
Coatesville, Pa. L75.1 Conshohocken, Pa. A35.19	0
Conshohocken, Pa. A35.10	õ
Ecorse, Mich. G5 5.2	o
Ecorse, Mich. G55.2 Fairfield, Ala. T25.1	ň
Fontana, Calif. (30) K1 5.9	ö
Gary, Ind. U55.1	ň
Geneva, Utah C115.1	ň
GraniteCity III C4 5 2	۸
Harrisburg Pa. P4 5 1	n
Houston S5 5 2	n
Houston S5 5.2 Ind. Harbor, Ind. I-2, Y1.5.1	n
Johnstown Pa R2 5 1/	n
Lackawanna, N.Y. B2 5.1	ń
Mansfield.O. E65.10	ń
Minnegua Colo Cio 5 o	₹.
Munhall, Pa. U55.10	í
Newbort Kv A9 5 10	`
Pittsburgh J55.10 Riverdale III. A15.10	í
Riverdale III. A1 5 16	í
Seattle B3	١.
Sharon.Pa. S35.10	ì
S.Chicago. Ill. U5, W14 5.10	ì
SparrowsPoint.Md. B2 5.10	ı
Sterling Ill. N15 5 10	ì
Steubenville, O. W10 5 10	ì
Warren, O. R25.10	•
Youngstown U5, Y15.10	ı
PLATES, Carbon Abras. Resist.	
Claymont Del. C22 6 75	

PLATES, Carbon	
Claymont. Del. (	222 6.75
Fontana, Calif.	K17.55
Geneva, Utah C	
Houston S5	6.85
Johnstown, Pa.	B26.75
SparrowsPoint, M	Id. B26.75

PLATES, Wroug Economy, Pa.		. 13. 15
PLATES, H.S., L		
Aliquippa, Pa. Bessemer, Ala.	J5 T2	.7.625 .7.625

Dessemer, Ata. 12 (.02)
Clairton, Pa. U5 7.625
Claymont, Del. C22 7.625
Cleveland J5, R27.625
Coatesville.Pa. L77.625
Conshohocken, Pa. A3 7.625
Economy, Pa. B147.625
Ecorse, Mich. G57.725
Fairfield, Ala. T27.625
Farrell.Pa. S37.625
Fontana, Calif. (30) K1.8.425
Gary, Ind. U57.625
Geneva, Utah C11 7.625
Houston S57.725
Ind. Harbor, Ind. I-2, Y1.7,625
Johnstown, Pa. B27.625

# Johnstown, Pa. B2 . 7.625 Munhall, Pa. U5 . 7.625 Pittsburgh J5 . 7.625 Seattle B3 . 8.525 Sharon, Pa. S3 . 7.625 S. Chicago, Ill. U5, W14 . 7.625 SparrowsPoint, Md. B2 . 7.625 Warren, O. R2 . 7.625 Youngstown U5 . 7.625 PLATES, ALLOY

Aliquippa, Pa. J57.20
Claymont, Del. C227.20
Coatesville, Pa. L77.20
Economy, Pa. B147.20
Fontana, Calif. K18.00
Gary, Ind. U57.20
Houston S57.30
Ind. Harbor, Ind. Y17.20
Johnstown, Pa. B27.20
Lowellville, O. S37.20
Munhall, Pa. U57.20
Newport, Ky. A27.20
Pittsburgh J57.20
Seattle B38.10
Sharon, Pa. S37.20
S.Chicago, Ill. U5, W147.20
SparrowsPoint, Md. B2 7.20
Youngstown Y17.20

#### FLOOR PLATES Cleveland J5 .........6.175

Conshohocken, Pa. A3 6.175
Ind. Harbor, Ind. I-26.175
Munhall, Pa. U56.175
S.Chicago, Ill. U56.175
DIATES Innet Inn
PLATES, Ingot Iron
Ashland c.l. (15) A105.35
Ashland l.c.l. (15) A105.85
Cleveland c.l. R25.85
Warren, O. c.l. R25.85

#### BARS

# BARS, Hot-Rolled Carbon (Merchant Quality)

Ala.City, Ala. (9) R25.425
Aliquippa, Pa. (9) J55.425
Alton, Ill. L15.625
Atlanta(9) A115.625
Bessemer, Ala. (9) T2 5.425
Birmingham (9) C155.425
Buffalo(9) R25.425
Clairton, Pa. (9) U5 5.425

Cleveland (9) R2 54
Cleveland (9) R25.4 Ecorse, Mich. (9) G55.5
Emeryville, Calif. J76.1 Fairfield, Ala. (9) T25.4
Fairfield Ala (0) To 54
Fairless Pa (0) IIE 55
Fairless, Pa. (9) U55.5 Fontana, Calif. (9) K16.1
Cory Ind (0) IIE
Gary, Ind. (9) U55.4:
Houston(9) S55.6' Ind. Harbor(9) I-2, Y15.4
Ind. rarbor (9) 1-2, 115.4
Johnstown, Pa. (9) B2 5.4
Joliet, Ill. P225.42 Kansas City, Mo. (9) 855.6
KansasCity, Mo. (9) Sb 5.6
Lackawanna (9) B25.42
LosAngeles(9) B36.1
LosAngeles(9) B36.11 Midland Pa. (23) C185.73 Milton,Pa. M185.57 Minnequa,Colo. C105.87 Niles.Calif. P16.12
Militon, Pa. M185.5
Minnequa, Colo. C105.87
Niles, Calif. Pl6.12
N.1 Wanda.N.1.(23)B110.//
Owenshoro, Ky. (9) G8 5.42
Pittsburg Calif. (9) C11.6.12
Pittsburgh(9) J55.42
Pittsburgh(9) J55.42 Portland, Oreg. O46.17 Seattle B3, N146.17 S Ch'c'go(9)R2,U5,W14 5.42
Seattle B3, N146.17
S.Ch'c'go(9)R2,U5,W14 5.42
S. Duquesne, Pa. (9) U5 5.42
S.SanFran., Calif. (9) B3 6.17
Sterling. Ill. (1) (9) N155.42
Sterling Ill. (9) N155.52
Struthers, $O.(9)$ Y1 5.42
Struthers, O. (9) Y1 5.42 Tonawanda, N.Y. B12 5.42
rorrance.Cam.(9) C11 .6.12
Youngstown(9) R2, U55.42

# BARS, H.R. Leaded Alloy (Including leaded extra)

Warren, O. C177.478
BARS, Hot-Rolled Alloy
Aliquippa, Pa. J56.475
Bethlehem Pa. B2 6.47
Bethlehem, Pa. B26.475 Bridgeport, Conn. C326.55
Buffalo R26.475
Buffalo R2
Clairton, Pa. U56.475
Detroit S416.475
Economy, Pa. B146.475
Ecorse, Mich. G5 6.575
Fairless, Pa. U56.625
Farrell, Pa. S36.475
Fontana, Calif. K17.525
Gary, Ind. U56.475
Houston S56.725 Ind. Harbor, Ind. I-2, Y1.6.475
Ind. Harbor, Ind. I-2, Y1.6.475
$fohnstown, Pa. B2 \dots 6.475$
KansasCity, Mo. S5 6.725
Lackawanna, N.Y. B2 6.475
Lowellville, O. S36.475
LosAngeles B37.525
Massillon, O. R26.475
Midland, Pa. C186.475
Owensboro, Ky. G86.475 Pittsburgh J56.475
Pittsburgh J56.475
Sharon, Pa. S36.475
S.Chicago R2, U5, W14 6.475
5. Duquesne, Pa. U56.475

# Struthers, O. Y1 .... 6.475 Warren, O. C17 .... 6.475 Youngstown U5 .... 6.475 BARS & SMALL SHAPES, H.R.

nign-attength		
Aliquippa, Pa.	J5	7.925
Bessemer, Ala.	T2	.7.925
Bethlehem, Pa.	B2	7.925
Clairton, Pa. U	J5	7.925
Cleveland R2		7.925
Ecorse, Mich.	G5	8.025
Fairfield, Ala.	T2	7.925
Fontana, Calif.	K1	8.625
Gary, Ind. U5		7.925
Houston S5		8.175
Ind. Harbor, Ind	. Y1	7.925
Johnstown.Pa.	B2	7.925
KansasCity, Mo.	S5	8.175
Lackawanna, N.	Y. B2	7.925
LosAngeles B3		8.625
Pittsburgh J5		7.925
Seattle B3		8.675
S.Chicago, Ill. U	J5, W14.	7.925
S. Duquesne, Pa.	U5	7.925
S.SanFrancisco	В3	8.675
Struthers, O. Y1		7.925
Youngstown U5		

BAR	SIZE	ANG	.ES;	H.R.	Carbo
Beth	nleher	n,Pa.	(9)	B2	5.57
					5.67
					5.67
					5.42
					5.52
					5.42
Ton:	awan	da N	Y F	219	5 49!

# BAR SIZE ANGLES; S. Shapes

Anquippa, Fa,	10	٠	 ٠	.0.426
Atlanta A11 .				.5.625
Joliet, Ill. P22				.5.425
Niles, Calif. P1	ι			.6.125
Pittsburgh J5		4		.5.425
Portland, Oreg.	O4			.6.175
SanFrancisco	87			.6.275
Seattle B3				.6.175

# BAR SHAPES, Hot-Rolled Alloy Aliquippa, Pa. J5 6.55 Clairton, Pa. U5 6.55 Gary, Ind. U5 6.55 Houston S5 6.80 KansasCity, Mo. S5 6.80 Pittsburgh J5 6.55 Youngstown U5 6.55

# BARS, C.F., Leaded Alloy (Including leaded extra)

9
Ambridge, Pa. W189.925
BeaverFalls.Pa. M129.925
Camden, N.J. P13 10.10
Chicago W189.925
Cleveland C209.925*
Elyria, O. W89.925
LosAngeles P2, S3011.40*
Monaca, Pa. S179.925
Newark, N.J. W1810.10
SpringCity, Pa. K310.10
Warren, O. C179.925

\*Grade A; add 0.50c for Grade B.

# 25 25 BARS, Cold-Finished Carbon

Ambridge, Pa. W187.30
Decampolic Do M19 D9 7 30
Birmingham C157.90
Buffalo B57.35
Camden. N.J. P137.75
Carnegie, Pa. C127.30
Chicago W187.30
Bermingham C157.90 Buffalo B57.35 Camden, N.J. P137.55 Carnegie, Pa. C127.30 Chicago W187.30 Cleveland A7, C207.30 Cleveland A7, C207.30 Cleveland A7, C207.30 Cleveland A7, C207.30
Detroit B5, P177.50
Detroit S417.30
Donora, Pa. A77.30
Cleveland A7, C20 Detroit B5, P17 , 7.50 Detroit S41 , 7.30 Donora, Pa. A7 , 7.30 Elyria, O. W8 , 7.30 FranklinPark, Ill. N5 , 7.30 Carv. Ind. P2 , 7.30
FranklinPark, Ill. N57.30
Gary, Ind. R2
GreenBay, Wis. F77.30
Hammond Ind. J5 L27.30
Hartford, Conn. R27.80
Hartford, Conn. R2
LosAngeles (49) 8308.75
Los Angeles P2, R28.75
Mansfield, Mass. B57.85
Massillon, O. R2, R87.30
Midland, Pa. C187.30
Monaca, Pa. 8177.30
Massillon, O. R2, R8 7.30 Midland, Pa. C118 7.30 Monaca, Pa. B17 7.30 NewCastle, Pa. (17) B4 7.30 Pittsburgh J5 7.30 Plymouth, Mich. P5 7.55 Putnam, Conn. W18 7.85 Readville, Mass. C14 7.85 S. Chicago, Ill. W14 7.30 SpringCity, Pa. K3 7.75 Struthers, O. Y1 7.30
NewCastle, Pa. (17) B4 7.30
Pittsburgh J57.30
Plymouth, Mich. P5 7.55
Putnam, Conn. W187.85
Readville, Mass. C14
S.Chicago, Ill. W147.50
SpringCity, Pa. K3730
Struthers, O. Y17.30
Walliamentic, Conn. J5
Willimantic, Conn. Jo 1.80
Waukegan, Ill. A77.30 Youngstown F3, Y17.30
Youngstown F3, 11

# BARS, Cold-Finished Carbon (Turned and Ground)

Cumberland, Md. (5) C19.6.55

#### BARS, Cold-Finished Alloy

Ambridge.Pa. W18	.8.775
Pethlehem Pa. B2	.8.775
Bethlehem, Pa. B2 Bridgeport, Conn. C32	8.925
Buffalo B5	.8.775
Comden N I P13	8.95
Canton.O. T7 Carnegie, Pa. C12	.8.775
Campagia Pa C12	.8.775
Chicago W18 Cleveland A7, C20	.8.775
Claveland A7 C20	8 775
Detroit B5, P17	8 975
Detroit Sd. 111	8 775
Detroit S41	8 775
Donora, Fa. At	8 775
Detroit B9, F17 Detroit S41 Donora,Pa. A7 Elyria.O. W8 FranklinPark.Ill. N5	9 775
FranklinPark,III. No .	9 775
Gary, Ind. R2 GreenBay, Wis. F7	0.775
GreenBay, Wis. Fi	0.110
Hammond, Ind. J5, L2.	.0.110
Hartford, Conn. R2	.9.070
Harvey, Ill. B5 Lackawanna, N.Y. B2.	.8.775
Lackawanna, N.Y. B2.	.8.775
LosAngeles P2, S30	.10.75
Mansfield, Mass. B5	.9.075
Massillon, O. R2, R8	.8.775
Midland, Pa. C18 Monaca, Pa. S17	. 8.775
Monaca, Pa. S17	. 8. 775
Newark, N.J. W18 Plymouth, Mich. P5 S. Chicago, Ill. W14 SpringCity, Pa. K3	8.95
Plymouth, Mich. P5	.8.975
S.Chicago, Ill. W14	. 8.775
SpringCity, Pa. K3	8.95
Striithers II. Y I	. 8. 7 ( )
Warren.O. C17	. 8.775
Waukegan, Ill. A7 Willimantic. Conn. J5 .	. 8.775
Willimantic.Conn. J5 .	.9.075
Worcester, Mass. A7	.9.075
Youngstown F3. Y1 .	.8.775

BARS, Reinforcing (To Fabricators)	RAIL STEEL BARS	SHEETS, H.R. (14 Ga. & Heavier) High-Strength, Low-Alloy	SHEETS, Cold-Rolled, High-Strength, Low Alloy	SHEETS, Well Casing Fontana, Calif. K17.175
AlabamaCity,Ala. R2 .5.425 Atlanta A115.425 Birmingham C15 .5.425 Buffalo R2 . 5.425 Cleveland R2 . 5.425 Ecorse,Mich. G55.775 Emeryville,Calif. J7 .6.175 Fairfield,Ala. T2 . 5.425 Farless,Pa. U5 .5.575 Fontana,Calif. K1 .6.125	ChicagoHts. (3) C2, I-2.5.325 ChicagoHts. (4) (44) I-2.5.425 ChicagoHts. (4) C25.425 Franklin, Pa. (3) F55.325 Franklin, Pa. (4) F55.425 JerseyShore, Pa. (3) J85.30 Marion, O. (3) P115.325 Tonawanda (3) B125.325 Tonawanda (4) B126.00 Williamsport, Pa. (3) S19.5.50	Cleveland J5, R2 7.275 Conshohocken, Pa. A3 7.325 Ecorse, Mich. G5 7.375 Fairfield, Ala. T2 7.275 Fairless, Pa. U5 7.325 Farrell, Pa. S3 7.275 Fontana, Calif. K1 8.025 Gary, Ind. U5 7.275	Cleveland J5, R2	SHEETS, Galvanized High-Strength, Low-Alloy Irvin, Pa. U5
Ft.Worth, Tex. (4) (26) T4 5.875 Gary, Ind. U5 5.425 Houston S5 5.675 Ind. Harbor, Ind. I-2, Y1 5.425 Johnstown, Pa. B2 5.425 Joliet, Ill. P22 5.425	SHEETS SHEETS, Hot-Rolled Steel (18 Gage and Heavier)	Munhall, Pa. U5	Weirton, W.Va. W68.975 Youngstown Y18.975	SHEETS, Galvanized Ingot Iron (Hot-Dipped Continuous) Ashland, Ky. A106.85 Middletown, O. A106.85
KansasCity, Mo. 85	AlabamaCity,Ala. R2 .4.925 Allenport,Pa. P74.925 Ashland,Ky.(8) A10 .4.925 Cleveland J5, R24.925 Conshohocken,Pa. A3 .4.975 Detroit(8) M15.025 Ecorse,Mich. G5 .5.025 Fairfield,Ala. T24.925	Youngstown U5, Y1	Steel         Fe           Ashland, Ky.         A10.6.95         7.20           Canton, O.         R26.95         7.45           Fairfield         T26.95         7.20           Gary, Ind.         U56.95         7.20           GraniteCity, Ill.         G4.7.15            Ind.Harbor         I-26.95         7.20           Irvin, Pa.         U56.95         7.20	SHEETS, Electrogalvanized Cleveland (28) R27.425 Niles, O. (28) R27.425 Youngstown J57.275 Weirton, W. Va. W67.275
Pittsburgh J5 5.425 Portland, Oreg. 04 6.175 SandSprings, Okla. S5 5.925 Seattle B3, N14 6.175 S.Chicago, Ill. R2 5.425 S. Duquesne, Pa. U5 5.425	Fairless, Pa. U5	Warren,O. R25.675  SHEETS, Cold-Rolled Ingot Iron Cleveland R26.80 Middletown,O. A106.55	Kokomo, Ind. C167.05 Martins Fry. W106.95 7.20 Pitts., Calif. C117.70 Pittsburgh J56.95	SHEETS, Aluminum Coated Butler, Pa. A10 (type 1). 9.25 Butler, Pa. A10 (type 2). 9.35 SHEETS, Enameling Iron
S.SanFrancisco B3	Ind. Harbor, Ind. I-2, Y1 4.925 Irvin, Pa. U5 4.925 Lackawanna, N.Y. B2 4.925 Mannsfield, O. E6 4.925 Munhall, Pa. U5 4.925 Newport, Ky. (8) A2 4.925 Niles, O. M21, S3 4.925 Pittsburg, Calif. C11 5.825	SHEETS, Cold-Rolled Steel (Commercial Quality) AlabamaCity,Ala. R26.05 Allenport,Pa. P76.05 Cleveland J5, R26.05 Conshohocken,Pa. A36.10	SHEETS, Culvert—Pure Iron Ind.Harbor,Ind. I-27.20 SHEETS, Galvanized Steel Hot-Dipped	Ashland, Ky. A106.625 Fairfield, Ala. T26.625 Gary, Ind. U56.625 GraniteCity, Ill. G46.825 Ind. Harbor. Ind. I-2, Y1.6.625 Irvin, Pa. U56.625 Middletown, O. A106.625
BARS, Reinforcing (Fabricated; to Consumers)	Pittsburgh J5	Ecorse, Mich. G5	AlabamaCity, Ala. R2 . 6.60‡ Ashland, Ky. A10 6.60‡ Canton, O. R2 6.60‡ Dover, O. E6 6.60‡ Fairfield, Ala. T2 . 6.60‡ Gary, Ind. U5 . 6.60‡	Niles, O. M21, S36.625 Youngstown Y16.625 BLUED STOCK, 29 Gage Follansbee, W. Va. F48.65
Johnstown, Pa. B2 7.08 KansasCity, Mo. S5 7.35 Lackawanna, N.Y. B2 6.85 Marion, O. P11 6.70 Newark, N.J. U8 7.55 Philadelphia U8 7.38	Warren, O. R.2 4.925 Weirton, W. Va. W6 4.925 Youngstown U5, Y1 4.925 SHEETS, H.R. (19) Ga. & Lighter	GraniteCity,Ill. G46.25 Ind.Harbor,Ind. I-2, Y1.6.05	GraniteCity, Ill. G46.80° Ind. Harbor, Ind. I-26.60† Irvin, Pa. U56.60† Kokomo, Ind. C166.70‡ MartinsFerry, O. W106.60°	Ind.Harbor,Ind. I-28.475 Yorkville,O. W108.475  SHEETS, Long Terne, Steel (Commercial Quality)
Pittsburgh J5, U8	Niles, O. M21	Newport, Ky. A2	Middletown, Ö. A10	BeechBottom, W. Va. W10 7.00 Gary, Ind. U5 7.00 Mansfield, O. E6 7.00 Middletown, O. A10 7.00 Niles. O. M21, R2, S3 7.00 Weirton, W. Va. W6 7.00
BARS, Wrought Iron Economy,Pa. (S.R.)B14 14.45 Economy,Pa. (D.R.)B14 18.00 Economy (Staybolt)B14. 18.45	Munhall.Pa. U58.10	Warren, O. R2	*Continuous and noncontinuous. †Continuous. ‡Noncontinuous.	SHEETS, Long Terne, Ingot Iron Middletown.O. A107.40
		—Key To Producers—		295 Ctainless Wolded Dred
A1 Acme Steel Co. A2 Acme-Newport Steel Co. A3 Alan Wood Steel Co. A4 Allegheny Ludlum Steel A5 Alloy Metal Wire Div. H. K. Porter Co. Inc. A6 American Shim Steel Co. A7 American Steel & Wire	C20 Cuyahoga Steel & Wire C22 Claymont Plant, Wick- wire Spencer Steel Div., Colo. Fuel & Iron C23 Charter Wire Inc. C24 G. O. Carlson Inc. C32 Carpenter Steel of N.Eng.	J1 Jackson Iron & Steel Co. J3 Jessop Steel Co. J4 Johnson Steel & Wire Co. J5 Jones & Laughlin Steel J6 Joslyn Mfg. & Supply J7 Judson Steel Corp. J8 Jersey Shore Steel Co.	P1 Pacific States Steel Corp. P2 Pacific Tube Co. P4 Phoenix Iron & Steel Co., Sub. of Barium Steel Corp. P5 Pilgrim Drawn Steel P6 Pittsburgh Coke & Chem. P7 Pittsburgh Steel Co.	S25 Stainless Welded Prod. S26 Specialty Wire Co. Inc. S30 Sierra Drawn Steel Corp. S40 Seneca Steel Service S41 Stainless Steel Div., J&L Steel Corp. S42 Southern Elec. Steel Co. T2 Tenn. Coal & Iron Div.,
Div., U. S. Steel Corp. A8 Anchor Drawn Steel Co. A9 Angell Nail & Chaplet A10 Armco Steel Corp. A11 Atlantic Steel Co.	<ul> <li>D2 Detroit Steel Corp.</li> <li>D3 Dearborn Div., Sharon Steel Corp.</li> <li>D4 Disston Div., H. K. Porter Co. Inc.</li> <li>D6 Driver-Harris Co.</li> <li>D7 Dickson Weatherproof</li> </ul>	K1 Kaiser Steel Corp. K2 Keokuk Electro-Metals K3 Keystone Drawn Steel K4 Keystone Steel & Wire K7 Kenmore Metals Corp. L1 Laclede Steel Co.	P11 Pollak Steel Co. P12 Portsmouth Div., Detroit Steel Corp. P13 Precision Drawn Steel P14 Pitts. Screw & Bolt Co. P15 Pittsburgh Metallurgical P16 Page Steel & Wire Div.,	U. S. Steel Corp. Tenn. Products & Chemical Corp. T4 Texas Steel Co. T5 Thomas Strip Div., Pittsburgh Steel Co. T6 Thompson Wire Co.
B1 Babcock & Wilcox Co. B2 Bethlehem Steel Co. B3 Beth. Pac. Coast Steel B4 Blair Strip Steel Co. B5 Bliss & Laughlin Inc.	Nail Co. D8 Damascus Tube Co. D9 Wilbur B. Driver Co. E1 Eastern Gas & Fuel Assoc.	L2 LaSalle Steel Co. L3 Latrobe Steel Co. L6 Lone Star Steel Co. L7 Lukens Steel Co. M1 McLouth Steel Corp.	American Chain & Cable P17 Plymouth Steel Corp. P19 Pitts. Rolling Mills P20 Prod. Steel Strip Corp. P22 Phoenix Mfg. Co.	T7 Timken Roller Bearing T9 Tonawanda Iron Div., Am. Rad. & Stan. San. T13 Tube Methods Inc. T19 Techalloy Co. Inc.
B8 Braeburn Alloy Steel B9 Brainard Steel Div., Sharon Steel Corp. B10 E. & G. Brooke, Wick- wire Spencer Steel Div., Colo. Fuel & Iron	E2 Eastern Stainless Steel E4 Electro Metallurgical Co. E5 Elliott Bros. Steel Co. E6 Empire-Reeves Steel Corp.	M4 Mahoning Valley Steel M6 Mercer Pipe Div., Saw- hill Tubular Products M8 Mid-States Steel & Wire M12 Moltrup Steel Products	P24 Phil. Steel & Wire Corp. R2 Republic Steel Corp. R3 Rhode Island Steel Corp. R5 Roebling's Sons, John A.	
B11 Buffalo Bolt Co., Div., Buffalo Eclipse Corp. B12 Buffalo Steel Corp. B14 A. M. Byers Co. B15 J. Bishop & Co.	F2 Firth Sterling Inc. F3 Fitzsimmons Steel Co. F4 Follanshee Steel Corp. F5 Franklin Steel Div., Borg-Warner Corp. F6 Fretz-Moon Tube Co.	M14 McInnes Steel Co. M16 Md. Fine & Special, Wire M17 Metal Forming Corp. M18 Milton Steel Div., Merritt-Chapman&Scott M21 Mallory-Sharon	R6 Rome Strip Steel Co. R8 Reliance Div., Eaton Mfg. R9 Rome Mfg. Co. R10 Rodney Metals Inc. S1 Seneca Wire & Mfg. Co.	U. S. Steel Corp.  V2 Vanadium-Alloys Steel  V3 Vulcan-Kidd Steel  Div., H. K. Porter Co.
C1 Calstrip Steel Corp. C2 Calumet Steel Div., Borg-Warner Corp. C4 Carpenter Steel Co.	F7 Ft. Howard Steel & Wire F8 Ft. Wayne Metals Inc. G4 Granite City Steel Co. G5 Great Lakes Steel Corp. G6 Greer Steel Co.	Metals Corp.  M22 Mill Strip Products Co.  N1 National-Standard Co. N2 National Supply Co. N3 National Tube Div.	S3 Sharon Steel Corp. S4 Sharon Tube Co. S5 Sheffield Div., Armco Steel Corp. S6 Shenango Furnace Co.	W1 Wallace Barnes Co. W2 Wallingford Steel Co. W3 Washburn Wire Co. W4 Washington Steel Corp. W6 Weirton Steel Co. W8 Western Automatic
C9 Colonial Steel Co. C10 Colorado Fuel & Iron C11 Columbia-Geneva Steel C12 Columbia Steel & Shaft. C13 Columbia Tool Steel Co.	G8 Green River Steel Corp.  H1 Hanna Furnace Corp.  H7 Helical Tube Co.	V. S. Steel Corp. N5 Nelsen Steel & Wire Co. N6 New England High Carbon Wire Co.	S7 Simmons Co. S8 Simonds Saw & Steel Co. S12 Spencer Wire Corp. S13 Standard Forgings Corp. S14 Standard Tube Co.	Machine Screw Co. W9 Wheatland Tube Co. W10 Wheeling Steel Corp. W12 Wickwire Spencer Steel
C14 Compressed Steel Shaft. C15 Connors Steel Div., H. K. Porter Co. Inc. C16 Continental Steel Corp. C17 Copperweld Steel Co.	I-1 Igoe Bros. Inc. I-2 Inland Steel Co. I-3 Interlake Iron Corp. I-4 Ingersoll Steel Div., Borg-Warner Corp.	N8 Newman-Crosby Steel N14 Northwest. Steel Rolling Mills Inc. N15 Northwestern S.&W. Co. N20 Neville Ferro Alloy Co.	S15 Stanley Works S17 Superior Drawn Steel Co. S18 Superior Steel Div., Copperweld Steel Co. S19 Sweet's Steel Co.	Div., Colo. Fuel & Iron W13 Wilson Steel & Wire Co. W14 Wisconsin Steel Div., International Harvester W15 Woodward Iron Co.
C18 Crucible Steel Co.	I-6 Ivins Steel Tube Works I-7 Indiana Steel & Wire Co.		S20 Southern States Steel S23 Superior Tube Co.	W18 Wyckoff Steel Co. Y1 Youngstown Sheet & Tube

STRIP	STRIP, Cold-Rolled Alloy Weirton, W. Va. W610. Boston T6	TIN MILL PRODUCTS
RIP, Hot-Rolled Carbon	Carnegle, Pa. S18 15.05 Cleveland A7 15.05 Dover, O. G6 15.05 Farrell, Pa. S3 15.05 Franklin Park, Ill. T6 15.05 Harrison, N.J. C18 15.05 Indianapolis J5 15.05 Lowellville, O. S3 15.05 Pawtucket, R.I. N8 15.40 Riverdale, Ill. A1 15.05 Worcester, Mass. A7 15.35 Worcester, Mass. A7 15.35 Voungstown J5 15.05	TIN PLATE, Electrolytic (Base Box)
1 ary, Ind. U5 4.925 id. Harbor, Ind. I-2, Y1.4.925 id. Harbor, Ind. I-2, Y1.4.925 ib. hnstown, Pa. (25) B2.4.925 ib. ckaw'na, N. Y. (25) B2.4.925 ib. ckaw'na, N. Y. (25) B3.5.675 innequa, Colo. C10 .6.025 ib. charber, Color C10 .6.025 ib. charber, C10 4.925 innequa, Colo. C10 .6.025 ib. charber, C10 4.925 innequa, Colo. C10 .6.025 ib. charber, C10 4.925 innequa, Color C10 4.925 innequa, C1	High-Strength, Low-Alloy Cleveland A7 10.45 Dearborn, Mich. D3 10.60 Dover, O. G6 10.45 Ecorse, Mich. G5 10.60 Farrell, Pa. S3 10.50 Alanta A11 5.6 Ind. Harbor, Ind. Y1 10.65 Sharon, Pa. S3 5.5 Warren, O. R2 10.45 Warren, O. R2 10.45 Voungstown U5 5.6	ELECTROTIN (22-27 Gage; Dollars per 100 lb)   Aliquippa, Pa. J5
Sain Francisco (25)   83, 5.675     Sain Francisco (25)   82, 4, 925     Sain Francisco (25)   82, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10		5. Sp. Pt., Md. B2 . 10.15 10.40  Weirton, W.Va. W6 10.05 10.30  Yorkville, O. W10 10.05 10.30  Mid. Harbor, Ind. Y1 . 7.50  Irvin, Pa. U5
louston S5 8.35 bid.Harbor.Ind. Y1 8.10 ansasCity.Mo. S5 8.35 cosAngeles B3 9.30 sowellville. O. S3 8.10 ewport.Ky. A2 8.10 charon.Pa. A2, S3 8.10 Chicago.Ill. W14 8.10 roungstown U5, Y1 8.10  TRIP, Hot-Rolled High-Strength, Low-Alloy	Harrison, N. J. C18 12.90 16.10 19.5   Indianapolis J5 9.10 10.55 12.60 15.60 18.6   LosAngeles C1 11.15 12.60 14.80 17.80   LosAngeles J5 11.15 12.60 14.80   NewBritain, Conn. S15 9.40 10.70 12.90 15.90 18.8   NewCastie, Pa. B4, E5 8.95 10.40 12.60 15.60   NewHaven, Conn. D2 9.40 10.70 12.90 15.90   NewKensington, Pa. A6 8.95 10.40 12.60 15.60   NewYork W3 10.70 12.90 16.10 19.3   Pawtuckt, R. I. N8 9.50 10.70 12.90 15.90 18.8   Riverdale, Ill. A1 9.05 10.40 12.60 15.60 18.5   Rome, N. Y. (32) R6 8.95 10.40 12.60 15.60 18.5   Sharon, Pa. S3 8.95 10.40 12.60 15.60 18.5	Wire, Manufacturers Bright, Low Carbon Schicago, III. R5
essemer, Ala. T2 7,325 onshohocken, Pa. A3 7,325 rcorse, Mich. G5 7,425 lairfield, Ala. T2 7,325 arrell, Pa. S3 7,325 ary, Ind. U5 7,325 ad, Harbor, Ind. I-2, Y1 7,325 ackawanna, N. Y. B2 7,325 osAngeles (25) B3 8,075 eattle (25) B3 8,325 haron, Pa. S3 7,325 Chicago, Ill. W14 7,325 SanFrancisco (25) B3 8,075 eattle (25) B3 8,075	Trenton, N. J. R5	5 Donora,Pa. A7 7.65 Alton,Ill. L1 9.50 Doubleth A7 7.65 Bartonville,Ill. K4 9.40 Fairfield,Ala. T2 7.65 Buffalo W12 9.30 Fostoria,O.(24) S1 7.75 Cleveland A7 9.30 Houston S5 7.90 Donora,Pa. A7 9.30 Jacksonville,Fia. M8 8.00 Duluth A7 9.30 Colonstown,Pa. B2 7.65 Fostoria,O. S1 9.35 Joliet,Ill. A7 7.65 Johnstown,Pa. B2 9.30 KansasCity,Mo. S5 7.90 KansasCity,Mo. S5 9.55 Kokomo, Ind. C16 7.75 LosAngeles B3 10.25 LosAngeles B3 8.60 Milbury, Mass. (12 N6 9.60 Minnequa,Colo. C10 7.90 Minnequa,Colo. C10 9.50 Monessen,Pa. P7, P16 7.65 Monessen,Pa. P7, P16, 9.30 N Tonawanda Ny B11 7.65 Muncel.Ind. 1-7 9.50
Varren.O. R2	Trenton, N. J. R5	Variable   Variable
lattimore T6	Niles, O. M21, S3	5 Bartonville, Ill. K4 12.65 Bartonville, Ill. K4 15.70 Buffalo W12 15.60 Cleveland A7 12.65 Chicago W13 15.60 Donora, Pa. A7 12.65 Cleveland A7 15.60 Duluth A7 12.65 Crawfordsville, Ind. M8.15.70 Johnstown, Pa. B2 12.65 Fostoria, O. S1 15.60 Minnequa, Colo. C10 12.775 Houston S5 15.85 Muncle, Ind. I-7 12.65 Johnstown, Pa. B2 15.60 NewHaven, Conn. A7 12.85 Johnstown, Pa. B2 15.60 NewHaven, Conn. A7 12.95 KansasCity, Mo. S5 15.85 Palmer Mass. W12 12.95 Kokomo, Ind. C16 15.60
nd.Harbor,Ind. Y17.15 mdianapolis J5	Vandergrift, Pa. U5 9.625*11.35 12.05 13.15 14.20 Warren, O. R2 9.625*11.35 12.05 13.15 14.20 Zanesville, O. A10 11.35† 12.05 13.15 14.20  Vandergrift, Pa. U5 State  Vandergrift, Pa. U5 5.55 16.05 17.10  Warren, O. R2 9.625*11.35 12.05 13.15 14.20  State  Vandergrift, Pa. U5 7.58  BeechBottom, W. Va. W10 15.00 15.55 16.05 17.10  Vandergrift, Pa. U5 15.00 15.55 16.05 17.10  Zanesville, O. A10 15.00 15.55 16.05 17.10	O Portsmouth, O P12
Ittsburgh J5 7.15 Iverdale, III. A1 7.25 ome, N.Y. (32) R6 7.15 haron, Pa. S3 7.15 renton, N.J. (31) R5 8.60 'alling ford, Conn. W2 7.60 'arren, O. R2, T5 7.15 'eirton, W. Va. W6 7.15 'orcester, Mass. A7 7.70	C.R. COILS & CUT	Cleveland A7         9.30         Monessen, Pa. P7         12.75           Donora, Pa. A7         9.30         Muncie, Ind. I-7         12.95           Duluth A7         9.30         Palmer, Mass. W12         13.05           Johnstown, Pa. B2         9.30         Portsmouth, O. P12         12.75           KansasCity, Mo. S5         9.55         Roebling, N. J. R5         13.05           LosAngeles         B3         10.25         SparrowsPt., Md. B2         12.85           Minnequa, Colo. C10         9.50         Struthers, O. Y1         12.75           Monessen, Pa. P7, P16         9.30         Worcester, Mass. J4         13.05

Wire, Tire Bead Bartonville, Ill. K416.55 Monessen, Pa. P1616.55 Roebling, N.J. R517.05 Wire, Cold-Rolled Flot Anderson, Ind. G611.65 Baltimore T61.95 Boston T611.95 Boston T611.95 Chicago W1311.75 Cleveland A711.65 Crawfordsville, Ind. M8.11.65 Corawfordsville, Ind. M8.11.65 Fostoria, O. S111.65 FranklinPark, Ill. T611.75 Kokomo, Ind. C1611.65 Milwaukee C2311.85 Milwaukee C2311.85 Palmer, Mass. W1219 Pawtucket, R.I. N819 Philadelphia P2419 Pawtucket, R.I. N819 Riverdale, Ill. A11.75 Rome, N.Y. R61.65 Sharon, Pa. S31.65 Trenton, N.J. R51.95 Worcester, Mass. A7. T6 11.95 NAILS, Stock Col.	Fairfield, Ala. T2	Crawf'dsville M8 17.25 19.05 Fostoria, O. S1 17.65 19.20† Houston S5 17.40 18.95** Jacksonville M8 . 17.25 19.05 Johnstown B2 17.15 18.95* Kan.City, Mo. S5 17.40	Hex Nuts, Semifinished, Heavy (Incl. Slotted):  ½ in. and smaller . 60.5  ½ in. to 1½ in., incl
AlabamaCity, Ala. R2 173 Aliquippa, Pa. J5 173 Atlanta A11 175 Bartonville, Ill. K4 175 Chicago W13 173 Cleveland A9 173 Crawfordsville, Ind. M8 175 Donora, Pa. A7 173 Duluth A7 173 Fairfield, Ala. T2 173 Houston S5 178 Jacksonville, Fla. M8 175 Johnstown, Pa. B2 173 Joliet, Ill. A7 173 KansasCity, Mo. S5 178 Kokomo, Ind. C16 175 Minnequa, Colo. C10 178 Monessen, Pa. P7 173 Pittsburg, Calif. C11 192	LosAngeles B3 11.45 Minnequa, Colo C10 10.90 Pittsburg, Calif. C11 11.45 S.Chlcago, Ill. R2 10.65 S.SanFrancisco C10 11.45 SparrowsPt. Md. B2 10.75 Sterling, Ill. (37) N15 10.75 Sterling, Ill. (37) N15 10.75 BALE TIES, Single loop Col. AlabamaCity, Ala. R2 212 Atlanta A11 2 214 Bartonville, Ill. K4 214 Crawfordsville, Ind. M8 214 Donora, Pa. A7 212 Duluth A7 212 Puluth A7 212 Fairfield, Ala. T2 212 Houston S5 217 Jacksonville, Fla. M8 214 Joilet, Ill. A7 212	Joliet, Ill. A78.65 9.20†  Kans.City(48) SS 8.90 9.45*  Kokomo C168.75 9.30†  LosAngeles B3 9.60 10.275  Monessen P7(48) 8.65 9.225  Palmer, Mass. W12 8.95 9.50†  Pitts. Calif. C119.60 10.15†  Rankin, Pa. A78.65 9.20*  S. SanFran. C109.60 10.15*  Spar'wsPt.B2(48) 8.75 9.425  Sterling(48) N15 8.90 9.575††  Sterling(1) (48) 8.30 9.475††  Sterling(1) (48) 8.30 9.475††  Struthers, O. Y18.65 9.30‡  Worcester, Mass. A7 8.95 9.50†  Based on zinc price of:  **13.50. †5c. \$10c. \$1ess*	2 ½ 12 56.04 65.67 49.88 3 12 59.76 70.03 53.19
Rankin, Pa. A7 173 S.Chicago, III. R2 173 SparrowsPt., Md. B2 175 Sterling, III. (7) N15 175 Worcester, Mass. A7 179 (To Wholesalers; per cwt) Galveston, Tex. D7 \$9.10 NAILS, Cut (100 lb keg) To Dealers (33) Conshohocken, Pa. A3 \$9.80 Wheeling, W. Va. W10 9.80 POLISHED STAPLES Col. AlabamaCity, Ala. R2 175 Atlanta A11 177 Aliquippa, Pa. J5 175 Atlanta A11 177 Crawfordsville, Ind. M8 177 Crawfordsville, Ind. M8 177 Dunora, Pa. A7 175 Duluth A7 175 Fairfield, Ala. T2 175 Houston S5 180 Jacksonville, Fla. M8 177 Johnstown, Pa. B2 175 Kansascity, Mo. S5 180 Kokomo, Ind. C16 177 Minnequa, Colo. C10 180 Kokomo, Ind. C16 177 Minnequa, Colo. C10 180 Kokomo, Ind. C16 177 Minnequa, Colo. C10 180 Kokomo, Ind. C16 177 Schicago, III. R2 175 Schicago, III. R2 175 Schicago, III. R2 175 SparrowsPt. Md. B2 177 Sterling, III. (7) N15 175 Worcester, Mass. A7 181 TIE WIRE, Automatic Baler I14 V2 G. I/Per 97 Ib Net Box Coil No. 3150 AlabamaCity, Ala. R2 \$10.26 Atlanta A11 10.36 Bartonville, III. K4 10.36 Buffalo W12 10.26	KansasCity, Mo. S5 217 Kokomo, Ind. C16 214 Minnequa, Colo. C10 217 Pittsburg, Calif. C11 236 SparrowsPt. Md. B2 214 Sterling, Ill. (7) N15 214 FENCE POSIS Birmingham C15 172 ChicagoHts., Ill. C2, I-2 172 Duluth A7 172 Huntington, W. Va. C15 172 Johnstown, Pa. B2 172 Huntington, W. Va. C15 172 Johnstown, Pa. B2 172 Marion, O. P11 172 Minnequa, Colo. C10 177 Sterling, Ill. (1) N15 172 Tonawanda, N. Y. B12 174 WiRE, Borbed AlabamaCity, Ala. R2 193** Aliquippa, Pa. J5 193** Aliquippa, Pa. J5 193** Aliquippa, Pa. J5 193* Bartonville, Ill. K4 198 Crawfordsville, Ind. M8 198 Donora, Pa. A7 193 Fairfield, Ala. T2 193* Jacksonville, Fla. M8 198 Johnstown, Pa. B2 196 Joliet, Ill. A7 193 KansasCity, Mo. S5 198** Kokomo, Ind. C16 195† Minnequa, Colo. C10 198* Monessen, Pa. P7 1968 Pittsburg, Calif. C11 213† Rankin, Pa. A7 193 Schicago, Ill. R2 193* S. Chicago, Ill. R2 193* S. Sanfrancisco C10 213*	than 10c. ††10.50c. **Subject to zinc equalization extras.  FASTENERS (Base discounts, full container quantity, per cent off list, f.o.b. mill)  BOLTS Carriage, Machine Bolts Full Size Body (cut thread) ½ in. and smaller: 6 in. and shorter 49.0 Longer than 6 in 39.0 ½ in. thru 1 in.: 6 in. and shorter 39.0 ½ in. and larger: All lengths 35.0 Undersized Body (rolled thread) ½ in. and smaller: 6 in. and shorter 49.0 Carriage, Machine, Lag Bolts Hot Galvanized: ½ in. and smaller: 6 in. and shorter 29.0 Longer than 6 in 15.0 ½ in. and larger: All lengths 12.0 Lag Bolts (all dlam.) 6 in. and shorter 49.0 Longer than 6 in 39.0 Plow and Tap Bolts ½ in. and smaller by 6 in. and smaller by 6 in. and shorter 49.0 Larger than ½ in. or longer than 6 in 39.0 Blank Bolts 39.0 Step, Elevator, Tire Bolts 49.0 Stove Bolts, Slotted:	Redik
Crieago W13 10.26 Crawfordsville, Ind. M8 10.36 Donora, Pa. A7 10.26 Duluth A7 10.26 Fairfield, Ala. T2 10.26 Houston S5 10.51 Jacksonville, Fla. M8 10.36 Johnstown, Pa. B2 10.26 KansasCity, Mo. S5 10.51 Kokomo, Ind. C16 10.26 KansasCity, Mo. S5 10.51 Minnequa, Colo. C10 10.50 Minnequa, Colo. C10 10.51 Minnequa, Colo. C10 10.51 S.SanFrancisco C10 11.04 S. Chicago, Ill. R2 10.26 S. SanFrancisco C10 10.36 Sterling, Ill. (37) N15 10.36 Coil No. 6500 Stond. AlabamaCity, Ala. R2, \$10.60 Atlanta A11 10.70 Bartonville, Ill. K4 10.70 Bartonville, Ill. K4 10.70 Bartonville, Ill. K4 10.70 Chicago W13 10.60 Crawfordsville, Ind. M8 10.70 Donora, Pa. A7 10.60	WOVEN FENCE, 9-15 Ga. Col. Ala.City,Ala. R2 187** Aliq'ppa,Pa.9-14½ga.J5 1908 Atlanta A11 192* Bartonville,Ill. K4 192 Crawfordsville,Ind. M8 192 Donora,Pa. A7 187† Duluth A7 187† Fairfield,Ala. T2 187† Houston S5 192** Jacksonville,Fla. M8 192 Johnstown,Pa. (43) B2 1908 Jollet,Ill. A7 187† KansasCity,Mo. S5 192** Kokomo,Ind. C16 1891 Minnequa,Colo. C10 192** Pittsburg,Calif. C11 210† Rankin,Pa. A7 187† Sterling,Ill. (7) N15 192†† WIRE (16 gage) An'ld Galv. WIRE (16 gage) Aliq'ppa, Pa. J5 17.15 18.95	sive	(5) 1½ to under 1 7/16 in.; (30) Sheared; for universal mill 1 7/16 to under 1 15/16 in., 6.70c; 1 15/16 to 3 in., inclusive, 7.05c, (6) Chicago or Birm. base. (7) Chicago base 2 cols. lower. (32) Buffalo base. (33) 16 Ga. and heavier. (32) Buffalo base. (33) To jobbers, deduct 20c. (34) 9.60c for cut lengths. (35) 72" and narrower. (36) Add 0.256 for 17 Ga. (36) 48" and narrower. (37) Chicago base, 10 points (38) Add 0.256 for 17 Ga. (38) 14 Ga. & lighter; 48" & heavier. (14) Gage 0.142 and lighter, (40) Lighter than 0.035"; (15) % and thinner. (41) Flats only; 0.25 in. & (42) Mill lengths, f.o.p. mill; beying or within the control of the con

以京二清京日	SEAMLESS STANDARD PIPE, Threaded and Coupled           Size—Inches         2         2½         2½           List Per Ft         370         58.5c         58.5c           Pounds Per Ft         3.68         5.82         5.82           Allquippa, Pa. J5         +9.25 + 24.25         +2.75 + 19.5         +19.5           Ambridge, Pa. N2         +9.25         -2.75         +2.75         +19.5           Lorain, O. N3         +9.25 + 24.25         +2.75 + 19.5         +2.75 + 19.5           Youngstown Y1         +9.25 + 24.25         +2.75 + 19.5	Carload of 3 76.5c 7.62  Bik Galv* + 0.25 + 17 + 0.25 + 17 + 0.25 + 17	3 ½ 92c 9.20 81k Gaiv* 1.25 +15.5 1.25 +15.5 1.25 +15.5	% \$1.09 10.89 Bik Galv* 1.25 + 15.5 1.25 + 15.5 1.25 + 15.5	5 \$1.48 14.81 Blk Galv* 1 +15.75 1 +15.75 1 +15.75	\$1.92 19.18 Bik Gaiv* 3.5 +13.25 3.5 3.5 +13.25 3.5 +13.25
de ser speed	ELECTRIC STANDARD PIPE, Threaded and Coupled Youngstown R2+9.25 +24.25 +2.75 +19.5	Carload 6 + 0.25 + 17	discounts from list, 1.25 +15.5	% 1.25 +15.5	1 +15.75	3.5 + 13.25

BUTTWELD STANDARD PIP	E, Threaded ar	d Coupled	Carload d	iscounts from list,	%		
Diac—Inches	<b>⅓</b> 8	1/4	%	1/2	%	1	11/4
List Per Ft 5.5	5c	6c	6c			17c	23c
Pounds Per Ft 0.3	0.4			8.5c	11.5c	1.68	2.28
		0.42	0.57	0.85	1.13		Blk Galv*
Aliquippo Do Tr	Galv* Bik	Galv* 1	Blk Galv*	Blk Galv*	Bik Galv*	Blk Galv*	
	****			5.25 + 10	8.25 + 6	11.75 + 1.5	14.25 + 0.75
Alton, Ill. L1			***	3.25 + 12	6.25 +8	9.75 + 3.5	12.25 + 2.75
Benwood, W. Va. W10 4.5	+22 +7.5	+31 +1		5.25 + 10	8.25 +6	11.75 + 1.5	14.25 + 0.75
	+21 +6.5	1 2 2		0.20 TIU			
Etna, Pa. N2		+30 +1	17 +38.5	1122 . 1211		44 75 14 5	14.25 + 0.75
Poisson D. 270	****			5.25 + 10	8.25 + 6	11.75 + 1.5	
Fontono Colle Tra	****			3.25 + 12	6.25 + 8	9.75 + 3.5	
Tolitana, Calli. KI	****			+8.25 + 23.5	+5.25 + 19.5	+1.75 +15	0.75 + 14.25
Indiana Harbor, Ind. Y1				4.25 + 11	7.25 + 7	10.75 + 2.5	13.25 + 3.25
Lorain, O. N3				5.25 + 10	8.25 +6	11.75 + 1.5	14.25 + 0.75
Sharon, Pa. S4 5.5			17 1 00 F				
Sharon, Pa. M6		+30 +1	17 +38.5	1.12.1 12.1.1	****	44 66 14 5	14.25 + 0.75
	. 000			5.25 + 10	8.25 + 6	11.75 + 1.5	12.25 + 2.75
Wheetland D. TTO	+ 23 + 8.5	+32 +1	19 +40.5	3.25 + 12	6.25 +8	9.75 + 3.5	
Wheatland, Pa. W9 5.5	+21 +6	+30 +1	17 +38.5	5.25 + 10	8.25 + 6	11.75 + 1.5	14.25 + 0.75
Youngstown R2, Y1				5.25 + 10	8.25 +6	11.75 + 1.5	14.25 + 0.75
				0.20   20	0.20		

1	Size—Inches List Per Ft	11/2	2	21/2	3	31/2	\$1.09
Д	Pounds Per Ft	27.5e	37e	58.5c	76.5c	92c	10.89
ř	Tournes Tel Pt	2.73	<b>3.6</b> 8	5.82	7.62	9.20	
5		Blk Galv*	Blk Galv*	Blk Galv*	Bik Galv*	Blk Galv*	Blk Galv*
9	Aliquippa, Pa. J5	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5		
Œ	Alton, Ill. L1	12.75 + 1.75	13.25 + 1.25	14.75 + 1.5	14.75 + 1.5		**** ****
9	Benwood, W. Va. W10	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5	6.25 + 10.5	6.25 + 10.5
1	Etna, Pa. N2	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5	6.25 + 10.5	6.25 + 10.5
8	Fairless, Pa. N3	12.75 + 1.75	13.25 + 1.25	14.75 + 1.5	14.75 + 1.5	4.25 + 12.5	4.25 + 12.5
3	Fontana, Calif. K1	1.25 + 13.25	1.75 + 12.75	3.25 + 13	3.25 + 13	+7.25 +24	+7.25 + 24
1	Indiana Harbor, Ind. Y1	13.75 + 0.75	14.25 + 0.25	15.75 + 0.5	15.25 + 0.5	5.25 + 11.5	5.25 + 11.5
9	Lorain, O. N3	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5		
ğ	Sharon, Pa. M6	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5		
ä	Sparrows Pt., Md. B2	12.75 + 1.75	13.25 + 1.25	14.75 + 1.5	14.75 + 1.5	4.25 + 12.5	4.25 + 12.5
1	Wheatland, Pa. W9	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5	6.25 + 10.5	6.25 + 10.5
3	Youngstown R2, Y1	14.75 0.25	15.25 0.75	16.75 0.5	16.75 0.5	6.25 + 10.5	6.25 + 10.5
ė.		0.20	10.20 0.15	10.10 0.0	10.10 0.0	0.22 , 2010	
ы	*Columniand mine di-						

<sup>\*</sup>Galvanized pipe discounts based on current price of zinc (10.00c, East St. Louis).

# Stainless Steel

Representative prices, cents per pound; subject to current lists of extras

1000	AISI		olling—	Forg-	H.R.	H.R. Rods; C.F.	Bars; Struc- tural			C.R. Strip; Flat	
8	Туре	Ingot	Slabs	Billets	Strip	Wire	Shapes	Plates	Sheets	Wire	ı
3	201	22.00	27.00		36.00	40.00	42.00	44.25	48.50	45.00	ı
100	202	23.75	30.25	36.50	39.00	40.75	43.00	45.00	49.25	49.25	ı
35	301	23.25	28.00	37.25	37.25	42.00	44.25	46.25	51.25	47.50	ı
N	302	25.25	31.50	38.00	40.50	42.75	45.00	47.25	52.00	52.00	ı
K	302B	25.50	32.75	40.75	45.75	45.00	47.25	49.50	57.00	57.00	ı
it.	303		32.00	41.00	46.00	45.50	48.00	50.00	56.75	56.75	ı
4	304	27.00	33.25	40.50	44.25	45.25	47.75	50.75	55.00	55.00	ı
Age	304L			48.25	51.50	53.00	55.50	58.50	63.25	62.75	ı
Non	305	28.50	36.75	42.50	47.50	45.25	47.75	51.25	58.75	58.75	ı
1	308	30.75	38.25	47.25	50.25	52.75	55.75	60.25	63.00	63.00	ĺ
N.	309	39.75	49.50	57.75	64.50	63.75	67.00	71.00	80.50	80.50	ĺ
į	310	49.75	61.50	78.00	84.25	86.50	91.00	92.75	96.75	96.75	ĺ
	314			77.50		86.50	91.00	92.75	99.00	104.25	ı
П	316	39.75	49.50	62.25	69.25	69.25	73.00	76.75	80.75	80.75	ĺ
	316L		55.50	70.00	76.50	77.00	80.75	84.50	89.25	88.50	1
П	317	48.00	60.00	76.75	88.25	86.25	90.75	93.50	101.00	101.00	ı
-	321	32.25	40.00	47.00	53.50	52.50	55.50	59.75	65.50	65.50	ı
4	330			106.75		95.25	106.75	105.50	108.00	149.25	ı
į.	18-8 CbTa	37.00	46.50	55.75	63.50	61.50	64.75	69.75	79.25	79.25	ı
	403			32.00		35.75	37.75	40.25	48.25	48.25	į
ı	405	19.50	25.50	29.75	36.00	33.50	35.25	37.50	46.75	46.75	
ı	410	16.75	21.50	28.25	31.00	32.00	33.75	35.00	40.25	40.25	
9	416			28.75		32.50	34.25	36.00	48.25	48.25	
	420	26.00	33.50	34.25	41.75	39.25	41.25	45.25	52.00	62.00	
ı	430	17.00	21.75	28.75	32.00	32.50	34.25	36.00	40.75	40.75	
ı	430F			29.50		33.00	34.75	36.75	51.75	42.00	
ı	431		28.75	37.75		42.00	44.25	46.00	56.00	56.00	
J	446			39.25	59.00	44.25	46.50	47.75	70.00	70.00	

Stainless Steel Producers Are: Allegheny Ludlum Steel Corp.; American Steel & Wire Div., U. S. Steel Corp.; Anchor Drawn Steel Co., division of Vanadium-Alloys Steel Co.; Armco Steel Corp.; Babcock & Wilcox Co.; Bethlehem Steel Co.; J. Bishop & Co.; Armco Steel Corp.; Babcock & Wilcox Co.; Bethlehem Steel Co.; J. Bishop & Co.; Armco Steel Corp.; G. O. Carlson Inc.; Carpenter Steel Co.; Carpenter Steel Co. of New England; Charter Wire Products; Crucible Steel Co. of America; Damascus Tube Co.; Dearborn Div., Sharon Steel Corp.; Wilbur B. Driver Co.; Driver-Harris Co.; Eastern Stainless Steel Corp.; Firth Sterling Inc.; Fort Wayne Metals Inc.; Green River Steel Corp., subsidiary of Jessop Steel Co.; Indiana Steel & Wire Co.; Ingersoll Steel Div., Borg-Warner Corp.; Ellwood Ivins Steel Tube Works Inc.; Jessop Steel Co.; Johnson Steel & Wire Co. Inc.; Stainless Steel Div., Jones & Laughlin Steel Corp.; Johnson Steel & Wire Co. Inc.; Stainless Steel Div., Jones & Laughlin Steel Corp.; Johnson Steel & Wire Co.; Ingersoll Steel Corp.; Maryland Fine & Specialty Wire Co. Inc.; McLouth Steel Corp.; Metal Forming Corp.; Midvale-Heppenstall Co.; National Standard Co.; National Tube Div., U. S. Steel Corp.; Pacific Tube Co.; Page Steel & Wire Div., American Chain & Cable Co. Inc.; Pittsburgh Rolling Mills Inc.; Republic Steel Corp.; Riverside-Alloy Metal Div., H. K. Porter Company Inc.; Rodney Metals Inc.; Sawhill Tubular Froducts Inc.; Sharon Steel Corp.; Simonds Saw & Steel Co.; Specialty Wire Co. Inc.; Standard Tube Co.; Superior Steel Div., Copperweld Steel Co.; Specialty Wire Co., subsidiary of Crucible Steel Co.; Superior Tube Co.; Swepco Tube Corp.; Techalloy Co. Inc.; Timken Roller Bearing Co.; Trent Tube Co., subsidiary of Crucible Steel Co.; Wallingford Steel Corp.; Vanadium-Alloys Steel Co.; Wall Tube & Metal Products Co.; Wallingford Steel Corp.; Vanadium-Alloys Steel Co.; Wall Tube & Metal Products Co.; Wallingford Steel Corp.; Vanadium-Alloys Steel Co.; Wall Tube & Metal Products Co.; Wallingford Steel Co., Su

# Clad Steel

			Plo		Sheets		
-			Carbo	n Base	Carbon Base		
		5%	10%	15%	20%	20%	
	Stainless						
	302					37.50	
	304	34.70	37.95	42.25	46.70	39.75	
)	304L	36.90	40.55	45.10	49.85		
5	316	40.35	44.50	49.50	54.50	<b>5</b> 8.2 <b>5</b>	
)	316L	45.05	49.35	54.70	60.10		
)	316 Cb	47.30	53.80	61.45	69.10		
)	321	36.60	40.05	44.60	49.30	47.25	
5	347	38.25	42.40	47.55	52.80	57.00	
)	405	28.60	29.85	33.35	36.85		
5	410	28.15	29.55	33.10	36.70		
5	430	28.30	29.80	33.55	37.25		
)	Inconel	48.00	59.55	70.15	80.85		
)	Nickel	41.65	51.95	62.30	72.70		
9	Nickel, Low Carbon	41.95	52.60	63.30	74.15		
5	Monel	43.35	53.55	63.80	74.05		
9	Copper*					46.00	
					Strip. 6	Carbon Base	
,						d Rolled-	
2					10%	Both Sides	
2	Copper*				33.10	38.75	
)	Cobber						

\*Deoxidized. Production points: Stainless-clad sheets, New Castle, Ind. I-4; stainless-clad plates, Claymont, Del. C22, Coatesville, Pa. L7, New Castle, Ind. I-4, and Washington, Pa. J3; nickel, inconel, monel-clad plates, Coatesville L7; copper-clad strip, Carnegie, Pa. S18.

# **Tool Steel**

3	Grade	\$ per lb	Grade \$	per lb
	Regular Carbon		CI-TIOC MOTOR SILLING	
,	Extra Carbon Special Carbon		W-Cr Hot Work	0.500 0.520
	Oil Hardening		Hi-Carbon-Cr	0.925

	Grade		A 11		
W	Cr	V	Co	Мо	\$ per lb
20.25	4.25	1.6	12.25		4.285
18.25	4.25	1	4.75		2.500
18	4	2	9		2.870
18	4	2			1.960
18	4	1			1.795
9	3.5	-			1.395
13.5	4	3			2.060
13.75	3.75	2	5		2.440
6.4	4.5	1.9		5	1.300
6	4	3		6	1.545
1.5	4	1		8.5	1.155
1.0	_				

Tool steel producers include: A4, A8, B2, B8, C4, C6 C13, C18, F2, J3, L3, M14, S8, U4, V2, and V3.

Pig Iron F.o.b. furna do not inclu-	ce prices i	n dolla eral tra	rs per g nsportati	gross ton, a	as reported to STEEL. Minimum delivered prices are approximate and
		No. 2	Malle- able	Besse- mer	No. 2 Malle-Besse-Basic Foundry able mer
Birmingham District					Duluth 1-3
Birmingham R2	62.00	62.50‡			Erie, Pa. 1-3
Birmingham U6		62.50‡	66.50		Everett, Mass. Et
Woodward, Ala. W15		62.50‡	66.50		Fontana, Calif. K1
Cincinnati, deld		70.20			GraniteCity, Ill. G4
Buffalo District					Ironton, Utah C11 66.00 66.50
	00.00	00 50	C7 00	67.50	Minnequa, Colo. C10 68.00 68.50 69.00
Buffalo H1, R2	66.00	66.50 66.50	67.00 67.00	67.50	Rockwood, Tenn. T3 62.50‡ 66.50
Tonawanda, N.Y. W12		66.50	67.00	67.50	Toledo, Ohio 1-3 66.00 66.50 67.00
Boston, deld.		77.79	78.29		Cincinnati, deld 72.54 73.04
Rochester, N.Y., deld		69.52	70.02		**Dhar 0.70 0.000
Syracuse, N.Y., deld		70.62	71.12		**Phos. 0.70-0.90%; Phos. 0.30-0.69%, \$63. †Phos. 0.70-0.90%; Phos. 0.30-0.69%, \$63.50.
Chicago District					
Chicago District					PIG IRON DIFFERENTIALS
Chicago I-3		66.50	66.50	67.00	Silicon: Add 75 cents per ton for each 0.25% Si or percentage thereof
S.Chicago, Ill. R2 S.Chicago, Ill. W14		66.50	66.50	67.00	over base grade, 1.75-2.25%, except on low phos. iron on which base
Milwaukee, deld.		69.52	66.50 69.52	67.00 70.02	is 1.75-2.00%.  Manganese: Add 50 cents per ton for each 0.25% manganese over 1%
Muskegon, Mich., deld		74.52	74.52	10.02	or portion thereof.
		11102			Nickel: Under 0.50% no extra; 0.50-0.74%, inclusive, add \$2 per ton
Cleveland District					and each additional 0.25%, add \$1 per ton.
Cleveland R2, A7	66.00	66.50	66.50	67.00	
Akron, Ohio, deld	69.12	69.62	69.62	70.12	BLAST FURNACE SILVERY PIG IRON, Gross Ton
Mid-Atlantic District					(Base 6.00-6.50% silicon; add \$1 for each 0.50% silicon or portion
Birdsboro, Pa. B10	68.00	68.50	69.00	69.50	thereof over the base grade within a range of 6.50 to 11.50%; starting
Chester.Pa. P4		68.50	69.00	05.50	with silicon over 11.50% add \$1.50 per ton for each 0.50% silicon or portion thereof up to 14%; add \$1 for each 0.50% Mn over 1%)
Swedeland, Pa. A3		68.50	69.00	69.50	Jackson, Ohio I-3, J1\$78.00
NewYork, deld.		75.50	76.00		Buffalo H1 79.25
Newark, N.J., deld	72.69	73.19	73.69	74.19	
Philadelphia, deld		70.91	71.41	71.99	ELECTRIC FURNACE SILVERY IRON, Gross Ton
Troy, N.Y. R2	68.00	68.50	69.00	69.50	ELECTRIC FORMACE SILER IN THE COURT OF THE 1907 ST. ST. 95 for
Bittohungh District					(Base 14.01-14.50% silicon; add \$1 for each 0.5% Si to 18%; \$1.25 for each 0.50% Mn over 1%; \$2 per gross ton premium for 0.045% max P)
Pittsburgh District					CalvertCity, Ky. P15 \$99.00
NevilleIsland, Pa. P6	66.00	66.50	66.50	67.00	NiagaraFalls, N.Y. P15 99.00
Pittsburgh (N&S sides), Aliquippa, deld		67.95	67.05	68.48	Keokuk, Iowa Open-hearth & Fdry, \$9 freight allowed K2 103.50
McKeesRocks, Pa., deld		67.60	67.95 67.60	68.48	Keokuk, Iowa O.H. & Fdry, 12½ lb piglets, 16% Si, max fr'gt
Lawrenceville. Homestead.		01.00	31.00	00.10	allowed up to \$9, K2 106.50
Wilmerding, Monaca, Pa., deld		68.26	68.26	68.79	
Verona, Trafford, Pa., deld	68.29	68.82	68.82	69.35	LOW PHOSPHORUS PIG IRON, Gross Ton
Brackenridge, Pa., deld		69.10	69.10	69.63	Lyles.Tenn. T3 (Phos. 0.035% max) \$78.50
Midland, Pa. C18	66.00				Rockwood, Tenn. T3 (Phos. 0.035% max)
					Troy, N. Y. R2 (Phos. 0.035% max) 74.00

# Warehouse Steel Products

Hubbard, Ohio Y1 ...
Sharpsville, Pa. S6 ...
66.00
Youngstown Y1 ...
Mansfield, Ohio, deld. ...
70.90

Youngstown District

 $66.50 \\ 66.50 \\ 66.50$ 

Representative prices, per pound, subject to extras, f.o.b. warehouse. City delivery charges are 15 cents per 100 lb except: Moline, Norfolk, Richmond, Washington, 20 cents; Baltimore, Boston, Los Angeles, New York, Philadelphia, Portland, Spokane, San Francisco, 10 cents; Atlanta, Chattanooga, Houston, Seattle, no charge.

Lyles, Tenn. T3 (Phos. 0.035% max)
Rockwood, Tenn. T3 (Phos. 0.035% max)
Troy, N.Y. R2 (Phos. 0.035% max)
Philadelphia, deld.
Cleveland A7 (Intermediate) (Phos. 0.036-0.075% max)
Duluth I-3 (Intermediate) (Phos. 0.036-0.075% max)
Erie, Pa. I-3 (Intermediate) (Phos. 0.036-0.075% max)
NevilleIsland, Pa. P6 (Intermediate) (Phos. 0.036-0.075% max)

			EETS-		STRIP		BARS		Standard		
	Hot- Rolled	Cold- Roiled	Gal. 10 Ga.†	Stainless Type 302	Hot- Rolled*	H.R. Rounds	C.F. Rds.‡	H.R. Alloy 4140††5	Structural Shapes	Carbon PLA	TES Floor
Atlanta	8.598	9.86§		1 y pe 302	8.64	9.01	10.68	414011-	9.05	8.97	10.90
Baltimore	8.28	8.88	9.68		8.76	9.06	11.34 #	15.18	9.19	8.66	10.14
Birmingham	8.18	9.45	11.07		8.23	8.60	10.57		8.64	8.56	10.70
Boston Buffalo	9.38 8.25	10.44 9.00	11.45 11.07	53.50 <b>55.</b> 98	9.42 8.50	9.73 8.80	12.90 # 11.00 #	15.28	9.63	9.72	11.20
Chattanooga	8.35	9.69	9.65		8.40	8.77	10.46	15.00	8.90 8.88	8. <b>90</b> 8. <b>80</b>	10.45 10.66
Chicago	8.20	9.45	10.10	53.00	8.23	8.60	8.80	14.65	8.88	8.56	9.88
Cincinnati	8.34	9.48	10.10	52.43	8.54	8.92	11.06	14.86	9.18	8.93	10.21
Cleveland	8.18	9.45	10.20	52.33	8.33	8.69	10.80#	14.74	9.01	8.79	10.11
Dallas Denver	7.50 9.38	8.80 11.75			7.65 9.41	7.60 9.78	11.01		9.00	9.45	10.70
Detroit	8.43	9.70	10.45	56.50	8.58	8.90	11.10 9.15	14.91	7.65 9.18	8.45 8.91	9.70 10.13
Erie, Pa	8.20	9.45	9.9510		8.50	8.75	9.0510		9.00	8.85	10.10
Houston	7.10	8.40	8.45	54.32	7.25	7.20	11.10	13.50	7.25	8.05	9.30
Jackson, Miss	8.52	9.79			8.57	8.94	10.68		8.97	8.90	10.74
Los Angeles	8.45	9.40	11.80	57.60	8.90	8.75	12.10	16.10	8.70	8.85	11.00
Memphis, Tenn.	8.55	9.80			8.60	8.97	11.96#		9.01	8.93	10.56
Milwaukee Moline, Ill	8.33 8.55	9.58 9.80	10.23		8.36	8.73	9.03	14.78	8.85	8.69	10.01
New York	8.57	10.13	10.45 10.56	53.08	8.58	8.95	9.15		8.99	8.91	
Norfolk, Va	8.10	10.15	10.56	93.08	9.31 9.10	9.57 9.10	12.76 # 12.00	15.09	9.35 9.40	9.43	10.66
Philadelphia	8.00	8.90	9.92	52.69	8.70	8.65	11.51#	15.01	8.50	8.85 8.75	10.35
Pittsburgh	8.18	9.45	10.45	52.00	8.33	8.60	10.80#	14.65	8.64	8.56	9.75** 9.88
Portland, Oreg	8.50	11.20	11.55	57.38	9.55	8.65	14.50	15.95	8.65	8.30	11.50
Richmond, Va. ,	8,40		10.40		9.10	9.00			9.40	8.85	10.35
St. Louis St. Paul	8.54 8.79	9.79 10.04	10.36 10.71		8.59	8.97	9.41	15.01	9.10	8.93	10.25
San Francisco	9.35	10.75	11.00	55.10	8.84 9.45	9.21 9.70	9.66 13.00 #	16.00	9.38	9.30	10.49
Seattle	9.95	11.15	12.20	57.38	10.00	10.10	14.05	16.35	9.50 9.80	9.60 9.70	12.00 12.10
South'ton, Conn. Spokane	9.07 9.95	10.33 11.15	10.71 $12.20$	57.00	9.48	9.74			9.57	9.57	10.91
Washington	8.88			57.38	10.00	10.10	14.05	16.35	9.80	9.70	12.10
					9.36	9.56	10.94		9.79	9.26	10.74

\*Prices do not include gage extras; prices include gage and coating extras; includes 35-cent bar quality extras; §42 in. and under; \*\*1/2 in. and heavier; prices includes and heavier; prices includes and heavier; prices annealed; prices and includes and includes and includes and includes and includes and over except and order; stainless sheets, 8000 lb and cold-finished bars, 2000 lb and over except in Seattle, 2000 to 9999 lb, and Francisco, 2000 to 4999 lb; hot-rolled products on West Coast, 2000 to 9999 lb, except in Portland, Oreg. 10,000 lb and in San 1000 to 1999 lb; 8—2000 to 3999 lb; 10—2000 lb and over.

\$78.50 78.50 74.00 82.67 71.00 71.00

71.00

# Refractories

Fire Clay Brick (per 1000)

High-Heat Duty: Ashland, Grahn, Hayward, Hitchins, Haldeman, Olive Hill, Ky., Athens, Troup, Tex., Beech Creek, Clearfield, Curwensville, Lock Haven, Lumber, Orviston, West Decatur, Winburne, Snow Shoe, Pa., Bessemer, Ala., Farber, Mexico, St. Louis, Vandalia, Mo., Ironton, Oak Hill, Parrall, Portsmouth, Ohio, Ottawa, Ill., Stevens Pottery, Ga., \$135; Salina, Pa., \$140; Niles, Ohio, \$138; Cutler, Utah, \$165.

Swper-Dauty: Ironton, Ohio, Vandalia, Mo., Olive Hill, Ky., Clearfield, Salina, Winburne, Snow Shoe, Pa., New Savage, Md., St. Louis, \$175; Stevens Pottery, Ga., \$185; Cutler, Utah, \$233.

Silica Brick (per 1000)

Standard: Alexandria, Claysburg, Mt. Union, Sproul, Pa., Ensley, Ala., Pt. Matlida, Pa., Portsmouth, Ohio, Hawstone, Pa., \$150; Warren, Niles, Windham, Ohio, Hays, Latrobe, Morrisville, Pa., \$155; E. Chicago, Ind., Joliet, Rockdale, Ill., \$160; Lehigh, Utah, \$175; Los Angeles, \$180.

Super-Duty: Sproul, Hawstone, Pa., Niles, Warren, Windham, Ohio, Leslie, Md., Athens, Tex., \$157; Morrisville, Hays, Latrobe, Pa., \$160; E. Chicago, Ind., \$167; Curtner, Calif., \$182.

Semislica Brick (per 1000)

Clearfield, Pa., \$140; Philadelphia, \$137; Woodbridge, N. J., \$135.

Ladle Brick (per 1000)

Dry Pressed: Alsey, Ill., Chester, New Cumberland, W. Va., Freeport, Johnstown, Merrill Station, Vanport, Pa., Mexico, Vandalia, Mo., Wellsville, Irondale, New Salisbury, Ohio, \$906.75; Clearfield, Pa., Portsmouth, Ohio, \$102.

High-Alumina Brick (per 1000)

50 Per Cent: St. Louis, Mexico, Vandalia, Mo., \$235; Danville, Ill., \$238; Philadelphia, Clear-

field, Pa., \$230; Orviston, Snow Shoe, Pa.,

Sleeves (per 1000)

Reesdale, Johnstown, Bridgeburg, Pa., St. Louis, \$188.

Nozzles (per 1000)

Reesdale. Johnstown, Bridgeburg, Pa., St. Louis, \$310.

Runners (per 1000)

Reesdale, Johnstown, Bridgeburg, Pa., \$234.

Dolomite (per net ton)

Domestic, dead-burned, bulk, Billmeyer, Blue Bell, Williams, Plymouth Meeting, York, Pa., Millville, W. Va., Bettsville, Millersville, Martin, Woodville, Gibsonburg, Narlo, Ohio, \$16.75; Thornton, McCook, Ill., \$17; Dolly Siding, Bonne Terre, Mo., \$15.

Magnesite (per net ton)

Domestic, dead-burned, ½ in. grains with fines: Chewelah, Wash., Luning, Nev., \$46; % in. grains with fines: Baltimore, \$73.

# Fluorspar

Metallurgical grades, f.o.b. shipping point in III., Ky., net tons, carloads, effective CaF<sub>2</sub> content 72.5%, \$37-41; 70%, \$36.40; 60%, \$33-35.50. Imported, net tons, f.o.b. cars point of entry, duty paid, metallurgical grade: European, \$33-34; Mexican, all rail, duty paid, \$25.25-25.75; barge, Brownsville, Tex., \$27.25-27.75

# Metal Powder

(Per pound f.o.b. shipping point in ton lots for minus 100 mesh, except as noted)

Sponge Iron, Swedish:
deld. east of Mississippi River, ocean bags
23,000 lb and over.. 10.50
F.o.b. Riverton or
Camden, N. J., west
of Mississippi River. 9.50

Sponge Iron, Domestic, 98 + % Fe: Deld. east of Mississippi River, 23,000 lb and over 10.50

Electrolytic Iron: 

Annealed, 99.5% Fe., 36.50 Unannealed (99 + % Fe) ...... 36.00

Unannealed (99 + % Fe) (minus 325 mesh) . . . . . 59.00 Powder Flakes (minus 16, plus 100 mesh). 29.00

Carbonyl Iron:
98.1-99.9%, 3 to 20 microns, depending on grade, 93.00-290.00 in standard 200-lb containers; all minus 200 mesh.

luminum:
Atomized, 500-lb
drum, freight allowed
Carlots 39.50
Ton lots 41.50
ntimony, 500-lb lots 42.00*
rass, 5000-lb

..30.30-45.70† lots 

Zinc, 5000-10 10ts

Tungsten:

Melting grade, 99%
60 to 200 mesh,
nominal;
1000 lb and over...
Less than 1000 lb...

Chromium, electrolytic
99.8% Cr min metallic basis ....

\*Plus cost of metal. †Depending on composition. ‡Depending on mesh.

# **Electrodes**

Threaded with nipple; unboxed, f.o.b. plant

#### GRAPHITE

——Incl Diam	nes—— Length	Per 100 lb					
2	24	\$60.75					
21/2	30	39.25					
3	40	37.00					
4	40	35.00					
51/8	40	34.75					
6	60	31.50					
7	60	28.25					
8, 9, 10	60	28.00					
12	72	26.75					
14	60	26.75					
16	72	25.75					
17	60	26.25					
18	72	26.25					
20	72	25.25					
24	84	26.00					
CARBON							

	CARBON	
8	60	13.30
10	60	13.00
12	60	12.95
14	60	12.85
14	72	11.95
17	60	11.85
17	72	11.40
20	84	11.40
20	90	11.00
24	72, 84	11.25
24	96	10.95
30	84	11.05
40, 35	110	10.70
40	100	10.70

**Imported Steel** 

(Base per 100 lb, landed, duty paid, based on current ocean rates. Any increase in these rates is for buyer's account. Source of shipment: Western continental European countries.)

20000 10 10 10 10 10 10 10 10 10 10 10 10	North Atlantic	South Atlantic	Gulf Coast	West Coast
Defermed Born Intermediate ASTM A 205	\$5.53	\$5.33	\$5.33	\$5.73
Deformed Bars, Intermediate, ASTM-A 305	5.73	5.58	5.58	5.99
Bar Size Angles	5.73	5.58	5.58	5.99
Structural Angles	5.88	5.72	5.72	6.02
I-Beams		5.72	5.72	6.02
Channels	5.88	0	6.62	6.94
Plates (basic bessemer)	6.79	6.62	8.20	8.50
Sheets, H.R	8.25	8.20		9.25
Sheets, C.R. (drawing quality)	9.00	8.95	8.95	9.20
Furring Channels, C.R., 1000 ft, 34 x 0.30 lb		0× ×0	05 50	00.40
per ft	25.71	25.59	25.59	26.46
Barbed Wire (†)	6.65	6.65	6.65	7.00
Merchant Bars	6.23	6.07	6.07	6.43
Hot-Rolled Bands	7.20	7.15	7.15	7.55
Wire Rods, Thomas Commercial No. 5	6.73	6.73	6.73	7.13
Wire Rods, O.H. Cold Heading Quality No. 5	7.07	7.07	7.07	7.47
Bright Common Wire Nails (§)	8.02	8.02	7.92	8.20

†Per 82 lb, net, reel. §Per 100-lb kegs, 20d nails and heavier.

# **Ores**

Lake Superior Iron Ore
(Prices effective for the 1958 shipping season,
gross ton, 51.50% iron natural, rail of vessel,
lower lake ports.)
Mesabi bessemer\$11.60
Mesabi nonbessemer 11.45
Old Range bessemer 11.85
Old Range nonbessemer 11.70
Open-hearth lump 12.70
High phos. 11.45
The foregoing prices are based on upper lake
rail freight rates, lake vessel freight rates,
handling and unloading charges, and taxes
thereon, which were in effect Jan. 30, 1957, and increases or decreases after that date are
absorbed by the seller.
Eastern Local Iron Ore
Lastera Local II on Ole

absorbed by the seller.
Eastern Local Iron Ore
Cents per unit, deld. E. Pa.
New Jersey, foundry and basic 62-64%
concentrates
Foreign Iron Ore
Cents per unit, c.i.f. Atlantic ports
Swedish basic, 65% 25.00
N. African hematite (spot) nom.
Brazilian iron ore, 68-69% 27.00
Tungsten Ore
Net ton, unit
Foreign wolframite, good commercial
quality\$11.80-12.00*
Domestic, concentrates f.o.b. milling
points

\*Before duty.

48% 3:1 \$50.00
48% 2.8:1 48.00
48% no ratio 39.00
South African Transvaal
48% no ratio \$37.00
44% no ratio 27.00
Turkish
48% 3:1\$55.00
Domestic
Rail nearest seller
18% 3:1 39.00
Molybdenum
Sulfide concentrate, per lb of Mo content, mines unpacked
Antimony Ore
Per short ton unit of Sb content, c.i.f. seaboard
55-60%
60-65% 2.60-2.90
Vanadium Ore
Cents per lb V <sub>2</sub> O <sub>5</sub>
Domestic

# **Metallurgical Coke**

Tree per little ton
Beehive Ovens
Connellsville, Pa., furnace \$14.75-15.75
Connellsville, Pa., foundry 18.00-18.50
Oven Foundry Coke
Birmingham, ovens\$28.85
Cincinnati, deld 31.84
Buffalo, ovens 30.50
Camden, N. J., ovens
Detroit. ovens
Pontiac, Mich., deld 32.45
Saginaw, Mich., deld 34.03
Erie, Pa., ovens 30.50
Everett, Mass., ovens:
New England, deld
To View and Italian and Italia
Indianapolis, ovens
Cincinnati, deld 31.84
Kearny, N. J., ovens
Milwaukee, ovens 30.50
Neville Island (Pittsburgh), Pa., ovens. 29.25
Painesville, Ohio, ovens 30.50
Cleveland, deld 32.69
Philadelphia, ovens
St. Louis, ovens 31.50
St. Paul, ovens
Chicago, deld,
Swedeland, Pa., ovens
Terre Haute, Ind., ovens
ZOITO ZIGGOO, ZIGGO, OTORIS

\*Or within \$4.85 freight zone from works.

# Coal Chemicals

Spot, cents per gallon, ovens 

# **Ferroalloys**

#### MANGANESE ALLOYS

**Spiegeleisen:** Carlot, per gross ton, Palmerton, Neville Island, Pa., 21-23% Mn, \$105; 19-21% Mn, 1-3% Si, \$102.50; 16-19% Mn, \$100.50.

Standard Ferromanganese: (Mn 74-76%, C 7% approx.) Base price per net ton; \$245, Johnstown, Duquesne, Sheridan, Neville Island, Pa.; Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; Portland, Oreg. Add or subtract \$2 for each 1% or fraction thereof of contained manganese over 76% or under 74%, respectively. (Mn 79-81%). Lump \$253 per net ton, f.o.b. Anaconda or Great Falls, Mont. Add \$2.60 for each 1% above 81%; subtract \$2.60 for each 1% below 79%, fractions in proportion to nearest 0.1%.

High-Grade Low-Carbon Ferromanganese: (Mn 85-90%). Carload, lump, bulk, max 0.07% C, 35.1c per lb of contained Mn, carload packed 36.4c, ton lots 37.9c, less ton 39.1c. Delivered. Deduct 1.5c for max 0.15% C grade from above prices, 3c for max 0.03% C, 3.5c for max 0.5% C, and 6.5c for max 75% C—max 7% Si. Special Grade: (Mn 90% min, C 0.07% max, P 0.06% max). Add 2.05c to the above prices. Spot, add 0.25c.

Medium-Carbon Ferromanganese; (Mn 80-85%, C 1.25-1.5%, Si 1.5% max). Carload, lump, bulk, 25.5c per lb of contained Mn, packed, carload 26.8c, ton lot 28.4c, less ton 29.6c. Delivered. Spot, add 0.25c.

Manganese Metal: 2" x D (Mn 95.5% min, Fe 2% max, Si 1% max, C 0.2%). Carload, lump, bulk, 45c per lb of metal; packed, 45.75c; ton lot 47.25c; less ton lot 49.25c. Delivered. Spot, add 2c.

Electrolytic Manganese Metal: Min carload, 34c; 2000 lb to min carload, 36c; less ton, 38c; 50 lb cans, add 0.5c per lb. Premium for hydrogen-removed metal, 0.75c per lb. Prices are f.o.b. cars, Knoxville, Tenn., freight allowed to St. Louis or any point east of Mississippi; or f.o.b. Marietta, O., freight allowed.

Silicomanganese: (Mn 65-68%). Carload, lump, bulk 1.50% C grade, 18-20% Si, 12.8c per lb of alloy. Packed, c.l. 14c, ton 14.45c, less ton 15.45c, f.o.b. Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; Portland, Oreg. For 2% C grade, Sil 15-17%, deduct 0.2% from above prices. For 3% C grade Sil 12-14.5%, deduct 0.4c from above prices. Spot, add 0.25c.

## TITANINUM ALLOYS

Ferrotitanium, Low-Carbon: (Tl 20-25%, Al 3.5% max, Si 4% max, C 0.10% max). Contract, ton lot, 2" x D, \$1.50 per lb of contained Ti; less ton \$1.55. (Tl 38.45%, Al 8% max, Sl 4% max, C 0.10% max). Ton lot \$1.35, less ton \$1.37, f.o.b. Niagara Falls, N. Y., freight allowed to St. Louis. Spot, add 5c.

Ferrotitanium, High-Carbon: (Ti 15-18%, C 6-8%). Contract \$200 per ton, f.o.b. Niagara Falls, N. Y., freight allowed to destinations east of Mississippi River and north of Baltimore and St. Louis.

Ferrotitanium, Medium-Carbon: (Ti 17-21%, C 2-4.5%). Contract \$225 per ton, f.o.b. Niagara Falls, N. Y., freight not exceeding St. Louis rate allowed.

#### CHROMIUM ALLOYS

High-Carbon Ferrochrome: Contract, c.l. lump, bulk 28.75c per lb of contained Cr; c.l. packed 30.30c, ton lot 32.05c; less ton 33.45c. Delivered. Spot, add 0.25c.

Low-Carbon Ferrochrome: Cr 63-66% (Simplex), carload, lump, bulk, C 0.025% max, 36.75c per lb contained Cr; 0.010% max, 37.75c. Ton lot, add 3.5c; less ton, add 5.2c. Delivered.

Cr 67-71%, carload, lump, bulk, C 0.02% max, 41.00c per lb contained Cr; 0.025% max, 39.75c; 0.05% max, 39.00c; 0.10% max, 38.50c; 0.20% max, 38.25c; 0.50% max, 38.00c; 1.0% max, 37.75c; 1.5% max, 37.50c; 2.0% max, 37.50c; 2.0

Foundry Ferrochrome, High-Carbon: (Cr 61-66%, C 5-7%, Sl 7-10%). Contract, c.l., 2 in. x D, bulk 30.05c per lb of contained Cr. Packed, c.l. 31.65c, ton 33.45c, less ton 34.95c. Delivered. Spot, add 0.25c.

Foundry Ferrosilicon Chrome: (Cr 50-54%, Si 28-32%, C 1.25% max). Contract, carload, packed, 8M x D, 21.25c, per lb of alloy, ton lot 22.50c; less ton lot 23.70c. Delivered. Spot add 0.25c.

Ferrochrome-Silicon: Cr 39-41%, Si 42-45%, C 0.05% max or Cr 33-36%, Si 45-48%, C 0.05% max. Carload, lump, bulk, 3" x down and 2" x down, 27.50c per lb contained Cr, 14.20c per lb contained Si. 0.75" x down, 28.65c per lb contained Cr, 14.20c per lb contained Si. Delivered.

#### VANADIUM ALLOYS

Ferrovanadium: Open-hearth grade (V 50-55%, Si 8% max, C 3% max). Contract, any quantity, \$3.20 per ib of contained V. Delivered. Spot, add 10c. Special Grade: (V 50-55% or 70-75%, Si 2% max, C 0.55% or 70-75%, Si 1.50% max, C 0.20% max) \$3.40.

Grainal: Vanadium Grainal No. 1 \$1.05 per lb; No. 79, 50c, freight allowed.

Vanadium Oxide: Contract less carload lot, packed, \$1.38 per lb contained  $\rm V_2O_5,\ freight$  allowed. Spot, add 5c.

#### SILICON ALLOYS

25-30% Ferrosilicon: Contract, carload, lump, bulk, 20.0c per lb of contained Si. Packed 21.40c; ton lot 22.50c, f.o.b. Nlagara Falls, N. Y., freight not exceeding St. Louis rate allowed.

50% Ferrosilicon: Contract, carload, lump, bulk, 14.20c per lb of contained Si. Packed c.l. 16.70c, ton lot 18.15c, less ton 19.80c, f.o.b. Alloy, W. Va.; Ashtabula, Marietta, O.; Sheffield, Ala.; Portland, Oreg. Spot, add 0.45c.

Low-Aluminum 50% Ferrosilicon: (Al 0.40% max). Add 1.45c to 50% ferrosilicon prices.

65% Ferrosilicon: Contract, carload, lump, bulk, 15.25c per lb contained silicon. Packed, c.l. 17.25c, ton lot 19.05c; less ton 20.4c. Delivered. Spot, add 0.35c.

75% Ferrosilicon: Contract, carload, lump, bulk, 16.4c per lb of contained Si. Packed, c.l. 18.30c, ton lot 19.95c, less ton 21.2c. Delivered. Spot, add 0.3c.

90% Ferrosilicon: Contract, carload, lump, bulk, 19.5c per lb of contained Si. Packed, c.l. 21.15c, ton lot 22.55c, less ton 23.6c. Delivered. Spot, add 0.25c.

Silicon Metal: (98% min Si, 0.75% max Fe, 0.07% max Ca). C.1. lump, bulk, 22.00c per lb of Si. Packed, c.1. 23.65c, ton lot 24.95c, less ton 25.95c. Add 0.5c for max 0.03% Ca grade. Deduct 0.5c, for max 1% Fe grade analyzing min 99.75% Si; 0.75c for max 1.25% Fe grades analyzing min 96.75% Si. Spot, add 0.25c.

Alsifer: (Approx 20% Al, 40% Si, 40% Fe). Contract, basis f.o.b. Niagara Falls, N. Y., lump, carload, bulk, 10.65c per lb of alloy; ton lot, packed, 11.8c.

#### ZIRCONIUM ALLOYS

12-15% Zirconium Alloy: (Zr 12-15%, Si 39-43%, C 0.20% max). Contract, c.l. lump, bulk 9.25c per lb of alloy. Packed, c.l. 10.45c, ton lot 11.6c, less ton 12.45c. Delivered. Spot, add 0.25c.

35-40% Zirconium Alloy: (Zr 35-40%, Si 47-52%, Fe 8-12%, C 0.50% max). Contract, carload, lump, packed 27.25c per lb of alloy, ton lot 28.4c, less ton 29.65c. Freight allowed. Spot, add 0.25c.

#### **BORON ALLOYS**

Ferroboron: (B 17.50% min, Si 1.50% max, Al 0.50% max, C 0.50% max). Contract, 100 lb or more 1" x D, \$1.20 per lb of alloy; less than 100 lb \$1.30. Delivered. Spot, add 5c. F.o.b. Washington, Pa., prices, 100 lb and over are as follows: Grade A (10-14% B) \$5c per lb; Grade B (14-18% B) \$1.20; Grade C (19% min B) \$1.50.

Borosil: (3 to 4% B, 40 to 45% Si). Carload, bulk, lump, or 3" x D, \$5.25 per lb of contained B. Packed, carload \$5.40, ton to c.l. \$5.50, less ton \$5.60. Delivered.

Bortam: (B 1.5-1.9%). Ton lot, 45c per lb; less than ton lot, 50c per lb.

Carbortam: (B 1 to 2%). Contract, lump, carload 9.50c per lb f.o.b. Suspension Bridge, N. Y., freight allowed same as high-carbon ferrotitanium.

#### CALCIUM ALLOYS

Calcium-Manganese-Silicon: (Ca 16-20%, Mn 14-18% and Si 53-59%). Contract, carload, lump, bulk 23c per lb of alloy, carload packed 24.25c, ton lot 26.15c, less ton 27.15c. Delivered. Spot, add 0.25c.

Calcium-Silicon: (Ca 30-33%, Si 60-65%, Fe 1.5-3%). Contract, carload, lump, bulk 24c per lb of alloy, carload packed 25.65c, ton lot 27.95c, less ton 29.45c. Delivered. Spot, add 0.25c

#### BRIQUETTED ALLOYS

Chromium Briquets: (Weighing approx 3% lb each and containing 2 lb of Cr). Contract, carload, bulk 19.60c per lb of briquet, carload packed in box pallets 19.80c, in bags 20.70c; 3000 lb to c.l. in box pallets 21.00c; 2000 lb to c.l. in bags 21.90c; less than 2000 lb in bags 22.80c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

Ferromanganese Briquets: (Weighing approx 3 lb and containing 2 lb of Mn). Contract, carload, bulk 14.8c per lb of briquet; c.l., packed, pallets 15c, bags 16c; 3000 lb to c.l., pallets 16.2c; 2000 lb to c.l., bags, 17.2c; less ton 18.1c. Delivered, Add 0.25c for notching. Spot, add 0.25c.

Silicomanganese Briquets: (Weighing approx 3½ lb and containing 2 lb of Mn and approx ½ lb of Si). Contract, c.l. bulk 15.1c per lb of briquet; c.l. packed, pallets, 15.3c; bags 16.3c, 3000 lb to c.l., pallets, 16.5c; 2000 lb to c.l., bags 17.5c; less ton 18.4c. Delivered. Add 0.25c for notching. Spot, add 0.25c.

Silicon Briquets: (Large size—weighing approx 5 lb and containing 2 lb of Si). Contract, carload, bulk 7.7c per lb of briquet; packed, pallets, 7.9c; bags 8.9c; 3000 lb to c.l., pallets 9.5c; 2000 lb to c.l., bags 10.5c; less ton 11.4c. Delivered. Spot, add 0.25c. (Small size—weighing approx 2½ lb and containing 1 lb of Si). Carload, bulk 7.85c. Packed, pallets 8.05c; bags 9.05c; 3000 lb to c.l., pallets 9.65c; 2000 lb to c.l., bags, 10.65c; less ton 11.55c. Delivered. Add 0.25c for notching, small size only. Spot, add 0.25c.

Molybdic-Oxide Briquets: (Containing 2½ lb of Mo each). \$1.41 per pound of Mo contained, f.o.b. Langeloth, Pa.

#### TUNGSTEN ALLOYS

Ferrotungsten: (70-80%), 5000 lb W or more \$2.15 per lb (nominal) of contained W. Delivered.

#### OTHER FERROALLOYS

Ferrocolumbium: (Cb 50-60%, Si 8% max, C 0.4% max). Ton lots 2" x D, \$4 per lb of contained Cb; less ton lots, \$4.05 (nominal). Delivered.

Ferrotantalum Columbium: (Cb 40% approx Ta 20% approx, and Cb plus Ta 60% min, C 0.30% max). Ton lot 2" x D, \$3.80 per lb of contained Cb plus Ta, delivered; less ton lot \$3.85 (nominal).

SMZ Alloy: (Si 60-65%, Mn 5-7%, Zr 5-7%, Fe 20% approx). Contract, c.l. packed ½-in. xl 2 M 20.00c per lb of alloy, ton lot 21.15c less ton 22.40c. Delivered. Spot, add 0.25c.

Graphidox No. 5: (Si 48-52%, Ca 5-7%, Ti 9-11%). C.l. packed, 19c per lb of alloy, ton lot 20.15c; less ton lot 21.4c, f.o.b. Niagara Falls, N. Y.; freight allowed to St. Louis.

V-5 Foundry Alloy: (Cr 38-42%, Si 17-19%, Mn 8-11%). C.l. packed 18.1c per lb of alloy; ton lot 19.55c; less ton lot 20.8c, f.o.b. Niagara Falls, N. Y.; freight allowed to St. Louis

Simanal: (Approx 20% each Si, Mn, Al; bal Fe). Lump, carload, bulk 18.50c. Packed c.l. 19.50c, 2000 lb to c.l. 20.50c, less than 2000 lb 21c per lb of alloy. Delivered.

Ferrophosphorus: (23-25% based on 24% P content with unitage of \$4 for each 1% of P above or below the base); carload, f.o.b. sellers' works. Mt. Pleasant, Siglo, Tenn., \$110 per gross ton.

Ferromolybdenum: (55-75%). Per lb of contained Mo, in 200-lb container, f.o.b. Langeloth and Washington, Pa. \$1.68 in all sizes except powdered which is \$1.74.

Technical Molybdic-Oxide: Per lb of contained Mo, in cans, \$1.39; in bags, \$1.38, f.o.b. Langeloth and Washington, Pa.

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# Steel Rate Advance Boosts Scrap

Three-point jump in ingot rate to 54.5 per cent reflected in higher prices on steelmaking grades of scrap. STEEL's composite goes up 67 cents to \$33.50

Scrap Prices, Page 172

Chicago — Scrap prices continue their uptrend here. Most quotations advanced last week by \$2 a ton. Brightening the market outlook, too, was the 4.5 point rise in the district steel operating rate-Inland Steel Co.'s estimated rate for the week is nearly 82 per cent of capacity, against 72 per cent in recent weeks.

With the exception of one mill, there has been little buying of scrap.

Philadelphia—Steel scrap prices are unchanged. Mill buying is slow. Most steelworks are taking in minimum tonnage and have light unfilled orders for heavy melting to be shipped. For export, about 4500 tons are being purchased for dock delivery, mostly within the Philadelphia port area. Export tonnage will be down in June. Heavy breakable cast is quoted off \$1 at \$40.

Pittsburgh — Improved steelmaking operations and scattered reports of mill buying have pushed premium grade scrap prices up about \$1. Home scrap and blast furnaces are meeting the needs of the major Until they come into the market, no big advances are expect-

Cleveland — Rising steelmaking operations serve to inject a note of strength into the local scrap market. The district ingot rate went up 4.5 points to 30.5 per cent of capacity. In the Valley the rate is holding at 45 per cent. Scrap interests anticipate some new buying in event the uptrend in steelmaking continues over the next few weeks. Meanwhile, limited sales of steel scrap at \$37 in the Valley have pushed prices upward here.

Washington — The Institute of Scrap Iron & Steel Inc. is waging a fight at national and state levels for lower freight rates on scrap. Its transportation committee is pressing for an adjustment in rates which will make the increase granted by the Interstate Commerce Commission in February more equitable; or eliminate it entirely on intrastate shipments.

New York-With domestic buying and shipments low, steel scrap prices are unchanged here for the third straight week. No. I heavy melting, brokers' buying price, holds at \$29-\$30. Some buying for export is reported at unchanged prices. Foundries are buying only small lots of cast iron scrap. Stainless scrap volume is small.

Youngstown—Scrap remains dull here despite small increases in steel operations and a stiffening of the market elsewhere. Last sales of No. 1 heavy melting here were at \$37. The mills hold substantial inventories. Several are using up to 65 per cent scrap in their furnace charges because of the low prices at which it can be bought.

Boston — No. 1 heavy melting steel and No. 2 bundles are slightly firmer, brokers paying \$1 more

a ton, shipping point. Slowest of the steel grades are borings and turnings, prices on which are nominal. Shipments to steelworks are at a low point and foundries are buying in small lots to support operations averaging no better than 50 per cent of capacity in gray iron.

Detroit—Although there's no mill buying, dealer trading is continuing to stimulate an uptrend in local scrap prices. Brokers are less optimistic than dealers. They talk

(Please turn to Page 177)





A 8245-3/4

Consumer prices per gross ton, except as otherwise noted, including brokers' commission, as reported to STEEL, May 21, 1958. Changes shown in italics.

Iron and Steel Scrap	STEEL, May 21, 1958. Changes si	hown in italics.	
STEELMAKING SCRAP	CLEVELAND	PHILADELPHIA	BOSTON
COMPOSITE  May 21\$33.50  May 1432.83	No. 1 heavy melting 32.50-33.50 No. 2 heavy melting 19.00-20.00 No. 1 factory bundles. 31.00-32.00	No. 1 heavy melting 34.00-35.00 No. 2 heavy melting 31.00 No. 1 bundles 34.00-35.00 No. 2 bundles 24.00	(Brokers' buying prices; f.o.b. shipping point)  No. 1 heavy melting 23.00-24.00  No. 2 heavy melting 18.00-19.00
Apr. Avg. 33.08 May 1957 45.75 May 1953 39.17	No. 1 bundles       32.50-33.50         No. 2 bundles       20.00-21.00         No. 1 busheling       32.50-33.50         Machine shop turnings       7.00-8.00         7.00-8.00       7.00-8.00	No. 1 busheling 34.00-35.00 Electric furnace bundles 36.00 Mixed borings, turnings 16.00† Short shovel turnings . 18.00	No. 1 bundles 22.00-26.00  No. 2 bundles 14.00-15.00  No. 1 busheling 23.00-24.00  Making shot turnings 4.00-5.00
Based on No. 1 heavy melting grade at Pittsburgh, Chicago, and eastern Pennsylvania.	Short shovel turnings. 11.00-12.00 Mixed borings, turnings Cast iron borings 11.00-12.00 Cut foundry steel 34.00-35.00	Machine shop turnings. 15.00 Heavy turnings 29.00 Structural & plate 39.00-40.00 Couplers, springs, wheels 43.50	Mixed borings, turnings. 4.00-3.00† Short shovel turnings. 6.00-7.00† No. 1 cast 28.00-29.00 Mixed curola cast 27.00-28.00
PITTSBURGH	Cut structurals, plates 2 ft and under 36.00-37.00 Low phos, punchings & plate	Rail crops, 2 ft & under 56.00-58.00  Cast Iron Grades  No. 1 cupola	No. 1 machinery cast 31.00-32.00  DETROIT
No. 1 heavy melting 32.00-33.00 No. 2 heavy melting 28.00-29.00 No. 1 dealer bundles 32.00-33.00 No. 2 bundles 25.00-26.00	Alloy free, short shovel turnings 16.00-17.00 Electric furnace bundles. 33.50-34.50	Heavy breakable cast       40.00         Malleable	(Brokers' buying prices; f.o.b. shipping point)  No. 1 heavy melting 24.00-25.00
No. 2 bundles	Cast Iron Grades  No. 1 cupola 42.00-43.00	NEW YORK (Brokers' buying prices)	No. 2 heavy melting 18.00-19.00 No. 1 bundles 25.00-26.00 No. 2 bundles 14.00-15.00
Mixed borings, turnings 13.00-14.00 Short shovel turnings. 17.00-18.00 Cast iron borings 17.00-18.00 Cut structurals: 2 ft and under 37.00-38.00	Charging box cast 33.00-34.00 Heavy breakable cast 33.00-34.00 Stove plate 43.00-44.00 Unstripped motor blocks Brake shoes 33.00-26.00 Clean auto cast 42.00-43.00	No. 1 heavy melting 29.00-30.00 No. 2 heavy melting 25.00-26.00 No. 1 bundles 29.00-30.00 No. 2 bundles 16.00-17.00 Machine shop turnings 8.00-9.00†	No. 1 busheling       24.00-25.00         Machine shop turnings       5.00-6.00         Mixed borings, turnings       6.00-7.00         Short shovel turnings       7.00-8.00         Punchings & plate       27.00-28.00
3 ft lengths 35.00-36.00 Heavy turnings 28.00-29.00 Punchings & plate scrap 37.00-38.00 Electric furnace bundles 37.00-38.00	Burnt cast	Mixed borings, turnings 9.00-10.00† Short shovel turnings . 11.00-12.00† Low phos (structurals & plates)	Cast Iron Grades           No. 1 cupola         31.00-32.00           Stove plate         26.00-27.00           Charging box cast         25.00-26.00
Cast Iron Grades  No. 1 cupola 40.00-41.00 Stove plate 40.00-41.00	R.R. malleable 60.00-61.00 Rails, 2 ft and under. 556.00-57.00 Rails, 18 in. and under. 57.00-58.00 Rails, random lengths. 49.00-50.00	Cast Iron Grades  No. 1 cupola	Heavy breakable 25.00-24.00 Unstripped motor blocks. 15.00-16.00 Clean auto cast 33.00-34.00
Unstripped motor blocks 23.00-24.00 Clean auto cast 40.00-41.00 Drop broken machinery 48.00-49.00	Cast steel       44.00-45.00         Railroad specialties       47.00-48.00         Uncut tires       40.00-41.00         Angles, splice bars       46.00-47.00	Stainless Steel  18-8 sheets, clips, solids	No. 1 heavy melting       27.00†         No. 2 heavy melting       25.00†         No. 1 bundles       21.00†
Railroad Scrap  No. 1 R.R. heavy melt. 36.00-37.00  Rails, 2 ft and under 53.00-54.00  Rails, 18 in. and under 54.00-55.00	Rails, rerolling 51.00-52.00  Stainless Steel  (Brokers' buying prices; f.o.b.	18-8 borings, turnings. 45.00-50.00 410 sheets, clips, solids 50.00-55.00 430 sheets, clips, solids 60.00-65.00	No. 2 bundles
Random rails       50.00-51.00         Railroad specialties       43.00-44.00         Angles, splice bars       47.00-48.00         Rails, rerolling       55.00-56.00	shipping point) 18-8 bundles, solids160.00-165.00 18-8 turnings 90.00-95.00 430 clips, bundles.	BUFFALO       No. 1 heavy melting 26.00-27.00         No. 2 heavy melting 22.00-23.00         No. 1 bundles 26.00-27.00	Cast Iron Grades  No. 1 cupola
Stainless Steel Scrap  18-8 bundles & solids170.00-175.00 18-8 turnings 95.00-100.00	solids	No. 2 bundles 20.00-21.00 No. 1 busheling 26.00-27.00 Mixed borings, turnings 13.00-14.00 Machine shop turnings 10.00-11.00	Unstripped motor blocks Stove plate (f.o.b. plant)
430 bundles & solids 95.00-100.00 430 turnings 50.00-52.00 CHICAGO	(Brokers' buying prices) No. 1 heavy melting 32.00	Short shovel turnings. 14.00-15.00 Cast iron borings 13.00-14.00 Low phos. structurals and plate, 5 ft and under 31.00-32.00	No. 1 heavy melting       34.00         No. 2 heavy melting       32.00         No. 1 bundles       30.00         No. 2 bundles       22.00
No. 1 hvy melt., indus. 34.00-35.00 No. 2 hvy melt., dealer. 32.00-33.00 No. 2 heavy melting 30.00-31.00 No. 1 factory bundles 38.00-39.00	No. 2 heavy melting       30.00         No. 1 bundles       32.00         No. 2 bundles       23.00         No. 1 busheling       32.00         Machine shop turnings       16.00	2 ft and under 35.00-36.00  Cast Iron Grades  (F.o.b. shipping point)  No. 1 cupola 39.00-40.00	Machine shop turnings. 9.00 Shoveling turnings 11.00 Cast iron borings 11.00 Cut structurals and plate
No. 1 dealer bundles 33.00-34.00 No. 2 bundles 25.00-26.00 No. 1 busheling, indus. 34.00-35.00 No. 1 busheling, dealer 32.00-33.00 Machine shop turnings 17.00-18.00	Short shovel turnings 18.00  Cast Iron Grades	No. 1 machinery 43.00-44.00  Railroad Scrap  Rails, random lengths. 45.00-46.00	Cast Iron Grades (F.o.b. shipping point)
Short should turnings 19.00-20.00	No. 1 cupola	Rails, 3 ft and under. 51.00-52.00 Railroad specialties 35.00-36.00 CINCINNATI	No. 1 cupola 41.00  Railroad Scrap  No. 1 R.R. heavy melt. 34.00
Cast iron borings 19.00-20.00 Cut structurals 3 ft 39.00-40.00 Punchings & plate scrap 40.00-41.00 Cast Iron Grades	Clean auto cast 44.00 Stove plate 37.00 Railroad Scrap	(Brokers' buying prices; f.o.b. shipping point) No. 1 heavy melting 29.00-30.00	SAN FRANCISCO No. 1 heavy melting 32.00
No. 1 cupola	No. 1 R.R. heavy melt. 35.50 Rails, 18 in. and under 48.00 Rails, random lengths 44.00	No. 2 heavy melting 25.00-26.00 No. 1 bundles 29.00-30.00 No. 2 bundles 19.50-20.50 No. 1 busheling 29.00-30.00	No. 2 heavy melting       30.00         No. 1 bundles       30.00         No. 2 bundles       22.00         Machine shop turnings.       15.00
Clean auto cast	Rails, rerolling 47.00 Angles, splice bars 45.00 BIRMINGHAM	Machine shop turnings. 9.00-10.00 Mixed borings, turnings 9.00-10.00 Short shovel turnings. 11.00-12.00 Cast iron borings 9.00-10.00	Mixed borings, turnings 15.00 Cast iron borings 15.00 Heavy turnings 15.00 Short shovel turnings 15.00
No. 1 R.R. heavy melt. 36.00-37.00 R.R. malleable 48.00-49.00 Rails, 2 ft and under 49.00-50.00 Rails, 18 in. and under 50.00-51.00	No. 1 heavy melting 30.00-31.00 No. 2 heavy melting 25.00-26.00 No. 1 bundles 30.00-31.00	Cast Iron Grades  No. 1 cupola 38.00-39.00	Cut structurals, 3 ft 40.00  Cast Iron Grades  No. 1 cupola 42.00
Angles, splice bars       44.00-45.00         Axles       54.00-55.00         Rails, rerolling       51.00-52.00         Stainless Steel Scrap	No. 2 bundles	Heavy breakable cast., 32.00-33.00 Charging box cast 32.00-33.00 Drop broken machinery 45.00-46.00 Railroad Scrap	Charging box cast 34.00 Stove plate 34.00 Heavy breakable cast 28.00 Unstripped motor blocks 31.00
18-8 bundles & solids, 160.00-165.00 18-8 turnings 85.00-95.00 430 bundles & solids 90.00-95.00	Short shovel turnings 22.00-23.00 Bar crops and plates 36.00-37.00 Structurals & plates 35.00-36.00 Electric furnace bundles 34.00-35.00	No. 1 R.R. heavy melt. 34.00-35.00 Rails, 18 in. and under 52.00-53.00 Rails, random lengths 43.00-44.00	Clean auto cast 40.00 Drop broken machinery 40.00 No. 1 wheels 34.00
430 turnings 45.00-50.00  YOUNGSTOWN	Electric furnace: 2 ft and under 33.00-34.00 3 ft and under 32.00-33.00	HOUSTON	HAMILTON, ONT. No. 1 heavy melting 30.00
No. 1 heavy melting 36.00-37.00 No. 2 heavy melting 22.00-23.00 No. 1 busheling 36.00-37.00	Cast Iron Grades  No. 1 cupola 48.00-49.00  Stove plate 48.00-49.00	(Brokers' buying prices; f.o.b. cars)  No. 1 heavy melting 29.00†  No. 2 heavy melting 27.00†  No. 2 bundles 19.00†  Machine shop turnings. 12.00	No. 2 heavy melting       26.00         No. 1 bundles       30.00         No. 2 bundles       23.00         Mixed steel scrap       25.00
No. 1 bundles       36.00-37.00         No. 2 bundles       21.00-22.00         Machine shop turnings       9.00-10.00         Short shovel turnings       13.00-14.00         Cast iron borings       13.00-14.00	Unstripped motor blocks 38.00-39.00 Charging box cast 22.00-23.00 No. 1 wheels 34.00-35.00 Railroad Scrap	Crushed turnings 16.00 Low phos. plates, structurals 35.00†	Mixed borings, turnings         15.00           Busheling, new factory:         30.00           Prepared         24.00           Unprepared         19.00
Low phos. 34.00-35.00  Electric furnace bundles. 37.00-38.00  Railroad Scrap	No. 1 R.R. heavy melt. 32.00-33.00 Rails, 18 in. and under 46.00-47.00 Rails, rerolling 46.00-47.00	Cast Iron Grades   No. 1 cupola	Cast Iron Grades: No. 1 machinery cast. 45.00-50.00
No. 1 R.R. heavy melt. 35.00-36.00	Rails, random lengths	Railroad Scrap No. 1 R.R. heavy melt. 31.00†	†Nominal. ‡F.o.b. Hamilton, Ont.



In this Logemann Scrap Press compressed bales measure 24 inches by 24 inches by a variable third dimension which is determined by the character and quantity of scrap charged. The first or gathering ram compresses the load of scrap from 20 ft. to 2 ft. . . . the intermediate side ram reduces the cross-dimension from 7 ft to 2 ft. . . . finally the third or finishing ram moves upward, to compress the vertical dimension into an extremely dense bale, ready for remelting. The cover is then withdrawn and the finishing ram elevates the compressed bale level with the top of the box, to allow the cover to push it off for loading into cars.

Two large 150 HP pumps generate hydraulic pressure for operating the press-rams at high pressures. Three smaller pumps are used to operate the press cover and the loading hopper. This hopper can be filled with miscellaneous scrap while the press is making a bale, and

then dumped quickly into the box as soon as the preceding bale has been discharged.

The large pumps give rapid movement to all rams, and to handle their fluid delivery the operating-valves are proportionately over-size. These valves are operated by compressed air and easily controlled from a remote stand, through a bank of electrical switches and pushbuttons, in front of the operator.

This same press can be used for baling bodies and extremely bulky scrap, also for making standard size, high-density bales of new sheet clips.

We are prepared to build many smaller sizes or larger, if required, to meet your specific requirements. You are invited to present your problem for discussion.

Write for details about the newly developed 3500-P series with tamping cover and side bale ejection and the new giant double compression press with box 20 ft. long, 7½ ft. wide, and 5 ft. deep.

# LOGEMANN BROTHERS CO.

3126 W. BURLEIGH STREET • MILWAUKEE 10, WISCONSIN

# Nickel Stocks Up

Industry's capacity is on the rise, but consumption is down. Result: Climbing inventories. Lead and zinc prices still vulnerable. Chuquicamata strike ends

Nonferrous Metal Prices, Pages 176 & 177

NICKEL production has outraced consumption this year, pushing stocks unusually high.

International Nickel Co. Inc. reports unsold stocks of nickel in North America (both in the hands of Inco and the U. S. government) were around 112 million lb on May 10 and are continuing to grow. It is estimated that customers held an additional 32 million lb in inventories on the same date. The total (144 million lb) "is the equivalent of over half the 1957 nickel consumption in North America," says Inco.

Demand Off — Inco estimates North American nickel consumption (civilian and defense) in the first half of this year is running at an annual rate of 170 million to 180 million lb, compared with a 1957 consumption rate of 251 million lb. Free World consumption during the first half is pegged at an annual rate of 340 million to 360 million lb, a drop from the 1957 figure of 412 million lb.

The business dip is generally blamed for nickel's present woes. Consumer stocks were extremely high at the beginning of the recession. Many observers believe that has compounded the trouble.

Too Much—Free World production capacity is estimated at around 525 million lb this year, compared with 489 million lb in 1957. Output won't be that great, though, since Inco is operating at around 60 million lb under capacity.

Watch for Free World capacity to spiral: 550 million lb in 1959, 600 million lb in 1960, 650 million lb in 1961.

# Lead, Zinc Vulnerable

Sales of both metals continue at a plodding pace. Zinc consumption in April was off 25 per cent from last year; lead was down 20 per cent. For the first time in years, domestic smelters are turning out enough of both metals to satisfy U. S. demand.

Imports of foreign origin metal selling at well under the domestic quotation were what caused U. S.



lead producers to lower their price to 11.5 cents a pound on May 14. There's still a differential of 0.25 to 0.5 cent a pound between U. S. and foreign lead.

Zinc, too, is unstable at its price of 10 cents a pound. Foreign metal is being offered in the U. S. at around 1 cent a pound under the domestic price. Further weakening

on the London Metal Exchange could cause price cuts in both metals.

# Aluminum Output Down

Production of primary aluminum fell a little in April and cut the total for the first four months to 531,918 tons, slightly under the 540,947 tons registered in the yearago period, reports the Aluminum Association.

End use statistics for 1957 just released by the association show 22.3 per cent of all wrought products were shipped to the building industry, compared with 19.2 per cent in 1956. Other industries that increased their percentage of the market include electrical and containers and packaging. The second biggest user, transportation, dropped to 15.8 per cent of the market from 18.6 per cent in 1956.

# Copper Figures Gloomy

Domestic production of refined copper fell by about 10,000 tons in April, but this didn't keep stocks from climbing (see chart). Deliveries to fabricators rose a little to 81,344 tons.

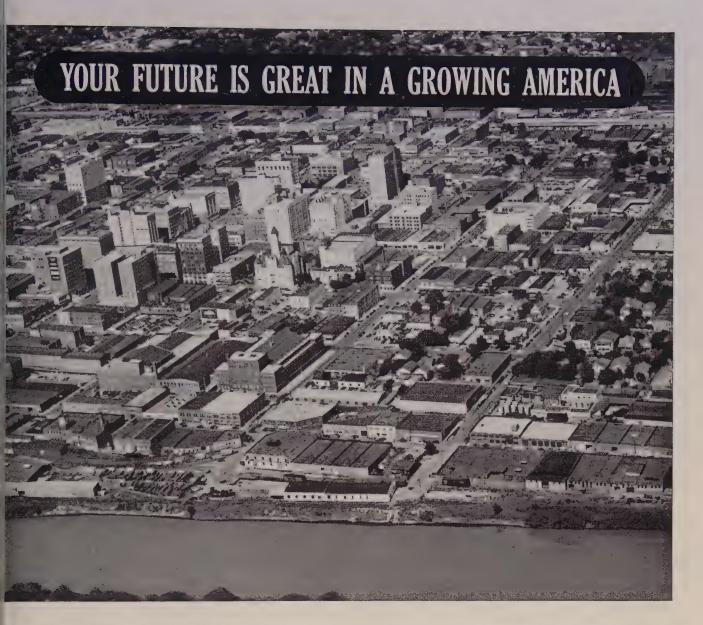
Both foreign production and deliveries dropped, mainly as the result of the strike at Anaconda Co.'s Chuquicamata, Chile, mine, say metalmen. The 51-day strike ended last week, but not before it cost Anaconda around 35,000 to 40,000 tons in lost production.

Domestic sales are spotty for primary producers. Custom smelters continue to do a fairly good volume of business at 23.75 cents a pound.

## NONFERROUS PRICE RECORD

	Price May 21		Last hang		Previous Price	Apr. Avg	Mar. Avg	May, 1957 Avg
Aluminum .	24.00	Apr.	1,	1958	26.00	24.000	26.000	25,000
Copper	23.75-25.00	Apr.	24,	1958	23.50-25.00	24.323	24.163	31.087
Lead	11.30	May	14,	1958	11.80	11.800	12.800	15.185
Magnesium .	35.25	Aug.	13,	1956	33.75	35.250	35.250	35.250
Nickel	74.00	Dec.	6,	1956	64.50	74.000	74.000	74.000
Tin	94.375	May	21,	1958	94.50	93.021	93.425	98.341
Zinc	10.00	July	1,	1957	10.50	10.000	10.000	13 500

Quotations in cents per pound based on: COPPER, mean of primary and secondary, deld. Conn. Valley; LEAD, common grade, deld. St. Louis; ZINC, prime western, E. St. Louis; TIN, Straits, deld. New York; NICKEL, electrolytic cathodes, 99.9%, base size at refinery, unpacked; ALUMINUM, primary pig, 99.5+%, f.o.b. shipping point; MAGNESIUM, pig, 99.8%, Velasco, Tex.



# THE CITY THAT DIDN'T EXIST A MONTH AGO

Every 30 days the U.S. adds as many new Americans as live in Norfolk, Va.—creating brand-new wants and needs which must be satisfied.

What does this mean to you? It means greater opportunities than ever before—in all fields. Home construction is expected to double by 1975. Power companies plan to increase output 250% in the next 20 years to provide the power for scores of new labor-saving devices. Clothing suppliers predict a one-third increase in 7 years.

With \$1,000 new citizen-consumers born every day, there's a new wave of opportunity coming.

#### 7 BIG REASONS FOR CONFIDENCE IN AMERICA'S FUTURE

- 1. More people . . . Four million babies yearly. U.S. population has doubled in last 50 years! And our prosperity curve has always followed our population curve.
- 2. More jobs... Though employment in some areas has fallen off, there are 15 million more jobs than in 1939—and there will be 22 million more in 1975 than today.
- More income . . . Family income after taxes is at an alltime high of \$5300-is expected to pass \$7000 by 1975.

- **4. More production . . . U.** S. production *doubles* every **20** years. We will require millions more people to make, sell and distribute our products.
- 5. More savings . . . Individual savings are at highest level ever-\$340 billion-a record amount available for spending.
- 6. More research . . . \$10 billion spent each year will pay off in more jobs, better living, whole new industries.
- 7. More needs . . . In the next few years we will need \$500 billion worth of schools, highways, homes, durable equipment. Meeting these needs will create new opportunities for everyone.

Add them up and you have the makings of another big upswing. Wise planners, builders and buyers will act *now* to get ready for it.

FREE! Send for this new 24-page illustrated booklet, "Your Great Future in a Growing America." Every American should know these facts. Drop a card today to: ADVERTISING COUNCIL, Box 10, Midtown Station, New York 18, N. Y.





(This space contributed as a public service by this magazine.)

May 26, 1958

# Nonferrous Metals

Cents per pound, carlots except as otherwise noted.

#### PRIMARY METALS AND ALLOYS

Aluminum: 99.5%, pigs, 24.00; ingots, 26.10, 10,000 lb or more, f.o.b. shipping point. Freight allowed on 500 lb or more.

Aluminum Alloy: No. 13, 27.90; No. 43, 27.70; No. 195, 28.70; No. 214, 29.50; No. 356, 27.90, 30-1b ingots.

Antimony: R.M.M. brand, 99.5%, 29.00; Lone Star brand, 29.50, f.o.b. Laredo, Tex., in bulk. Foreign brands, 99.5%, 23.50-24.50, New York, duty paid, 10,000 lb or more.

Beryllium: 97% lump or beads, \$71.50 per lb, f.o.b. Cleveland or Reading, Pa.

Beryllium Aluminum: 5% Be, \$74.75 per lb contained Be, with balance as Al at market price, f.o.b. shipping point.

Beryllium Copper: 3.75-4.25% Be, \$43 per lb of contained Be, with balance as Cu at market price on shipment date, f.o.b. shipping

Bismuth: \$2.25 per ton, ton lots.

Cadmium: Sticks and bars, \$1.55 per lb deld. Cobalt: 97-99%, \$2.00 per lb for 550-lb keg; \$2.02 per lb for 100 lb case; \$2.07 per lb under 100 lb.

Columbium: Powder, \$55-90 per lb, nom.

Germanium: First reduction, \$179.17-197.31 per lb; intrinsic grade, \$197.31-220 per lb, depending on quantity.

Gold: U. S. Treasury, \$35 per oz.

Indium: 99.9%, \$2.25 per troy oz.

Iridium: \$70-80 nom. per troy oz. Lead: Common, 11.30; chemical, 11.40; corroding, 11.40, St. Louis, New York basis, add

Lithium: 98 + %, 50-100 lb, cups or ingots, \$12; rod, \$15; shot or wire, \$16. 100-500 lb, cups or ingots, \$10.50; rod, \$14; shot or wire \$15, f.o.b. Minneapolis.

Magnesium: Pig, 35.25; ingot, 36.00 f.o.b. Velasco, Tex.; 12 in. thick, 59.00 f.o.b. Velasco, Te Madison, Ill.

Magnesium Alloys: AZ91A (diecasting), 40.75 deld.; AZ63A, AZ92A, AZ91C (sand casting), 40.75, f.o.b. Velasco, Tex.

Mercury: Open market, spot, New York, \$228-230 per 76-lb flask.

Molybdenum: Unalloyed, turned extrusions, 3.75-5.75 in. round, \$9.60 per lb in lots of 2500 lb or more, f.o.b. Detroit.

2500 lb or more, f.o.b. Detroit.

Nickel: Electrolytic cathodes, sheets (4 x 4 in. and larger), unpacked, 74.00; 10-lb pigs, unpacked, 78.25; "XX" nickel shot, 779.50; "F" nickel shot for addition to cast fron, 74.50; "F" nickel, 5 lb ingots in kegs for addition to cast iron, 75.50. Prices f.o.b. Port Colborne, Ont., including import duty, New York basis, add 1.01. Nickel oxide sinter, 71.25 per lb of nickel content before 1 cent freight allowance, f.o.b. Copper Cliff, Ont.

Osmium: \$70-100 per troy oz nom.

Palladium: \$19-21 per troy oz.

Platinum: \$64-70 per troy oz from refineries. 

Rhodium: \$118-125 per troy oz.

Ruthenium: \$45-55 per troy oz.

Selenium: \$7.00 per lb, commercial grade.

Silver: Open market 88.625 per troy oz.

Sodium: 16.50, c.l.; 17.00 l.c.l.

Tantalum: Rod, \$60 per lb; sheet, \$55 per lb.

Tellurium: \$1.65-1.85 per lb.

Thallium: \$7.50 per lb.

Tin: Straits, N. Y., spot and prompt, 94.375. Titanium: Sponge, 99.3+% grade A-1 ductile (0.3% Fe max.), 2.05; grade A-2 (0.5% Fe max.), \$1.85 per lb.

Tungsten: Powder, 98.8%, carbon reduced. 1000-lb lots, \$3.15 per lb nom., f.o.b. shipping point; less than 1000 lb. add 15.00; 99+% hydrogen reduced, \$3.85.

Zinc: Prime Western, 10.00; brass special, 10.25; intermediate, 10.50, East St. Louis, freight allowed over 0.50 per lb, New York basis, add 0.50. High grade, 11.00; special high grade, 11.25 deld. Diecasting alloy ingot No. 3, 13.75; No. 2, 14.75; No. 5, 14.25 deld. Zirconium: Sponge, commercial grade, \$5-10

(Note: Chromium, manganese, and silicon metals are listed in ferroalloy section.)

# SECONDARY METALS AND

Aluminum Ingot: Piston alloys, 24.00-24.50; No. 12 foundry alloy (No. 2 grade), 21.25-21.50; 5% silicon alloy, 0.60 Cu max., 24.00-24.25; 13 alloy, 0.60 Cu max., 24.00-24.25; 195 alloy, 24.25-25.50; 108 alloy, 21.75. Steel deoxidizing grades, notch bars, granulated or shot: Grade 1, 22.75; grade 2, 21.25; grade 3, 20.00; grade 4, 17.25.

Brass Ingot: Red brass, No. 115, 25.25; tin bronze, No. 225, 34.00, No. 245, 28.75; high-leaded tin bronze, No. 305, 29.25, No. 1 yellow, No. 405, 20.75; manganese bronze, No. 421,

Magnesium Alloy Ingot: AZ63A, 37.50; AZ91B, 37.50; AZ91C, 41.25; AZ92A, 37.50.

### NONFERROUS PRODUCTS

#### BERYLLIUM COPPER

(Base prices per lb, plus mill extras, 2000 to 5000 lb; nom. 1.9% Be alloy.) Strip, \$1.80, f.o.b. Temple, Pa., or Reading, Pa.; rod, bar, wire, \$1.78, f.o.b. Temple, Pa.

#### COPPER WIRE

Bare, soft, f.o.b. eastern mills, 30,000-lb lots, 30,355; l.c.l., 30,98. Weatherproof, 30,000-lb lots, 32.53; l.c.l., 33.28. Magnet wire deld., 38.43, before quantity discounts.

#### LEAD

(Prices to jobbers, f.o.b. Buffalo, Cleveland, Pittsburgh.) Sheets, full rolls, 140 sq ft or more, \$17.00 per cwt; pipe, full coils, \$17.00 per cwt; traps and bends, list prices plus 30%.

(Prices per lb, 10,000 lb and over, f.o.b. mill.) Sheets and strip, \$8.50-15.95; sheared mill plate, \$6.00-9.50; wire, \$6.50-11.00; forging billets, \$4.10-4.35; hot-rolled and forged bars, \$5.25-6.35.

#### ZINC

(Prices per lb, c.l., f.o.b. mill.) Sheets, \$24.00; plate, \$12.50-19.20; H.R. strip, \$12.50-22.90; \$11.00-17.40.

#### ZIRCONIUM

C.R. strip, \$15.90-31.25; forged or H.R. bars, ribbon zinc in coils, 20.50; plates, 19.00.

#### NICKEL, MONEL, INCONEL

"A"	Nickel	Monel	Inconel
Sheets, C.R	126	106	128
Strips, C.R	124	108	138
Plate, H.R	120	105	121
Rod, Shapes, H.R	107	89	109
Seamless Tubes	157	129	200

Sheets: 1100, 3003, and 5005 mill finish (30,000 lb base; freight allowed).

Range,	Flat	Coiled
Inches	Sheet	Sheet
0.249-0.136 0.135-0.096 0.125-0.096 0.095-0.077 0.076-0.061 0.060-0.048 0.047-0.038	41.10-45.60 41.60-46.70 	38.50-39.10 38.60-39.30 38.80-40.00 39.40-41.10
0.037-0.030 0.029-0.024 0.023-0.019	44.60-60.90 45.20-52.70 46.20-56.10	39.90-32.50 40.30-44.30 40.60-45.00 41.70-43.40
0.018-0.017 0.016-0.015 0.014	47.90-53.40 47.90-54.30 48.90	42.30-44.00 43.10-44.80 44.10-45.80
0.013-0.012 0.011 0.010-0.0095 0.009-0.0085	50.10 51.10 52.60 53.90	44.80 46.00 47.40 48.90
0.008-0.0075 0.007 0.006	55.50 57.00 58.60	50.10 51.60 53.00

	A)	LUM	INTUM	(continu	ted)	
Plates a	and	Circ	les:	Thickness	0.250-3	in.
24-60 in.	wid	th or	dian	1., 72-240	in. lengths.	
Alloy			Pl	ate Base	Circle B	ase
1100-F.	3003	-F		41.70	46.50	
				42.80	47.60	7
3004-F				43.80	49.50	
5052-F				44.40	50.20	
				44.90	51.00	
2024-T4				48.60	55,40	
2024-14 7075-T6*				56.40	64.00	

\*24-48 in. width or diam., 72-180 in. lengths.

Screw Machine Stock: 30,000 lb base. Diam. (in.) or —Round——Hexagonal—across flats 2011-T3 2017-T4 2011-T3 2017-T-4

0.125

1.563 1.625-2.000

.125-2.500

2.500-3.000

3.250-3.375

2.063

76.20 73.20 ....

55.50

55.50

0.156	64.20	61.40		
0.172		61.40		
0.188	64.20	61.40		79.60
0.203	64.20	61.40		
0.219-0.234	61.00	59.50		
0.250	61.00	59.50	88.40	75.90
0.266-0.281	61.00	59.50		
0.313	61.00	59.50	81.40	72.20
0.344	60.50		81.40	
Cold-Finished				
0.375-0.547	60.50	59.30	72.80	67.80
0.563-0.688	60.50	59.30	69.10	63.50
0.719	, , , ,	57.70		
0.750-1.000	59.00	57.70	62.90	59.70
1.063	59.00	57.70		57.60
1.250-1.500	56.60	55.40	60.80	57.60
Rolled				
4 500	EE 00	52.70		

Forging Stock: Round, Class 1, random lengths, diam. 0.688-8 in., "F" temper: 2014, 41.50-54.30; 6061, 40.90-54.30; 7075, 42.90-56.30; 7079, 43.40-56.80.

51.40 51.40 49.70

49.70

54.30

52.80 51.20

Pipe: ASA schedule 40, alloy 6063-T6, standard lengths, plain ends, 90,000-lb base, per 100 ft. Nom. Pipe Nom. Pipe

Size (in.)		Size (in.)	
3/4	\$18.60	2	\$ 57.40
1 /*	29.35	4	157.60
14	39.75	6	282.95
11/2	47.50	8	425.80
/,44			

Extruded	Solid Shapes:	
	Alloy	Alloy
Factor	6063- <b>T</b> 5	6062- <b>T</b> 6
9-11	45.40-47.00	58.60-62.80
12-14	45.70-47.20	59.30-63.80
15-17	45.90-47.90	60.50-65.50
18-20	46.50-48.30	62.50-68.10

#### MAGNESIUM

MAGNESIUM

Sheet and Plate: AZ31B standard grade, 0.32 in., 103.10; .081 in., 77.90; .125 in., 70.40; .188 in., 69.00; .250-2.0 in., 67.90. AZ31B spec. grade, .032 in., 171.30; .081 in., 108.70; .125 in., 98.10; .188 in., 95.70; .250-2.00 in., 93.30. Tread plate, 60-192 in. lengths, 24-72 in. widths; .125 in., 74.90; .188 in., 71.70-72.70; .25-.75 in., 70.60-71.60. Tooling plate, .25-3.0 in., 73.00.

#### Extruded Solid Shapes:

	Com. Grade	Spec. Grade
Factor	(AZ31C)	(AZ31B)
6-8	69.60-72.40	84.60-87.40
12-14	70.70-73.00	85.70-88.00
24-26	75.60-76.30	90.60-91.30
36-38	89.20-90.30	104.20-105.30

# NONFERROUS SCRAP DEALER'S BUYING PRICES

(Cents per pound, New York, in ton lots.)

Aluminum: 1100 clippings, 12.00-12.50; old sheets, 9.00-9.50; borings and turnings, 5.00-

## **BRASS MILL PRICES**

	Sheet.	MILL P.	RODUCTS a		SCRAP A	LLOWA	NCESI
	Strip, Plate	Rod	Wire	Seamless Tubes	Clean Heavy		Clean Curnings
Copper	48.13b	45.36c		48.32	21.000	21.000	20.250
Yellow Brass	42.69	29.53d	43,23	45.60	16.125	15.875	14.500
Low Brass, 80%	44.90	44.84	45.44	47.71	17.875	17.625	17.125
Red Brass, 85%	45.67	45.61	46.21	48.48	18,625	18.375	17.875
Com. Bronze, 90%		46.92	47.52	49.54	19,250	19.000	18.500
Manganese Bronze		44.91	55.44		14.875	14.625	14.125
Muntz Metal	45.19	41.00			15.125	14.875	14.375
Naval Brass	47.07	41.38	54.13	50.48	14.875	14.625	14.125
Silicon Bronze	52.84	52.03	<b>52.88</b>	54.77	20.625	20.375	19.625
Nickel Silver, 10%		60.26	60.26		21.125	20.875	10.562
Phos. Bronze, A-5%	67.17	67.67	67.67	68.85	21.875	21.625	20.625
a. Cents per lb, f.o.b.	mill: freigh	t allowed	on 500 lb or	more h	Hot.rolled	a Cold	dwarm

d. Free cutting, e. Prices in cents per lb for less than 20,000 lb, f.o.b. shipping point. On lots over 20,000 lb at one time, or any or all kinds of scrap, add 1 cent per lb.

5.50; crankcase, 9.00-9.50; industrial castings, 9.00-9.50.

Copper and Brass: No. 1 heavy copper and wire, 18.00-18.50; No. 2 heavy copper and wire, 16.00-16.50; light copper, 14.00-14.50; No. 1 composition red brass, 15.00-15.50; No. 1 composition turnings, 14.00-14.50; new brass clippings, 13.00-13.50; light brass, 8,50-9.00; heavy yellow brass, 10.50-11.00; new brass rod ends, 11.00-11.50; auto radiators, unsweated, 11.00-11.50; cocks and faucets, 12.50-13.00; brass pipe, 12.50-13.00.

Lead: Heavy, 6.75-7.00; battery plates, 2.50-2.75; linotype and stereotype, 9.25-9.75; electrotype, 8.50-9.00; mixed babbitt, 9.75-10.25.

Monel: Clippings, 28.00-29.00; old sheets, 25.00-26.00; turnings, 20.00-23.00; rods, 28.00-29.00.

Nickel: Sheets and clips, 42.00-45.00; rolled anodes, 42.00-45.00; turnings, 37.00-40.00; rod ends, 42.00-45.00.

**Zinc:** Old zinc, 3.00-3.25; new diecast scrap, 2.75-3.00; old diecast scrap, 1.50-1.75.

#### REFINERS' BUYING PRICES

(Cents per pound, carlots, delivered refinery)

Aluminum: 1100 clippings, 15.50-16.25; 3003 clippings, 15.50-16.25; 6151 clippings, 15.50-16.50; 5052 clippings, 15.00-15.75; 2014 clippings, 15.00-15.25; 2017 clippings, 15.00-15.25; 2024 clippings, 15.00-15.25; mixed clippings, 14.00-14.75; old sheets, 11.50-12.25; clippings, 15.00-15.25; mixed clippings, 14.00-14.75; old sheets, 11.50-12.25; clean old cable (free of steel), 14.25-15.25; borings and turnings, 12.00-13.00.

Beryllium Copper: Heavy scrap, 0.020-in, and heavier, not less than 1.5% Be, 51.00; light scrap, 46.00; turnings and borings, 31.00.

Copper and Brass: No. 1 heavy copper and wire, 20.00; No. 2 heavy copper and wire, 18.25; light copper, 16.00; refinery brass (60% copper) per dry copper content, 17.75.

#### INGOTMAKERS' BUYING PRICES

Copper and Brass: No. 1 heavy copper and wire, 20.00; No. 2 heavy copper and wire, 18.25; light copper, 16.00; No. 1 composition borings, 17.50; No. 1 composition solids, 18.00; heavy yellow brass solids, 12.50; yellow brass turnings, 11.50; radiators, 14.00.

#### PLATING MATERIALS

shipping point, freight allowed on quantities)

#### ANODES

Cadmium: Special or patented shapes, \$1.70. Copper: Flat-rolled, 41.79; oval, 40.00, 5000-10,000 b; electrodeposited, 31.25, 2000-5000 bb lots; cast, 36.25, 5000-10,000 bb quantities.

Nickel: Depolarized, less than 100 lb, 114.25; 100-499 lb, 112.00; 500-4999 lb, 107.50; 5000-29,999 lb, 105.25; 30.000 lb, 103.00. Carbonized, deduct 3 cents a lb.

Fin: Bar or slab, less than 200 lb, 113.50; 200-199 lb, 112.00; 500-999 lb, 111.50; 1000 lb or more, 111.00.

Zine: Balls, 16.00; flat tops, 16.00; flats, 19.25; ovals, 18.50, ton lots.

#### CHEMICALS

Cadmium Oxide: \$1.70 per lb in 100-lb drums. Chromic Acid: 100 lb, 33.30; 500 lb, 32.80; 200 lb, 32.15; 5000 lb, 31.80; 10,000 lb, 31.30; f.o.b. Detroit.

Copper Cyanide: 100-200 lb, 68.40; 300-900 lb, 66.40; 1000-19,900 lb, 64.40. Copper Sulphate: 100-1900 lb, 13.70; 2000-5900 lb, 11.70; 6000-11,900 lb, 11.45; 12,000-22,900 lb, 11.20; 23,000 lb or more, 10.70.

Nickel Chloride: 100 lb, 48.50; 200 lb, 46.50; 300 lb, 45.50; 400-999 lb, 43.50; 10,000 lb or more, 40.50.

Nickel Sulphate: 5000-22,000 lb, 33.50; 23,000-35,900 lb, 33.00; 36,000 lb or more, 32.50. Sodium Cyanide: 100 lb, 27.60; 200 lb, 25.90; 400 lb, 22.90; 1000 lb, 21.90; f.o.b. Detroit. Sodium Stannate: Less than 100 lb, 75.80; 100-300 lb, 66.80; 700-1900 lb, 64.00; 2000-9900 lb, 32.20; 10,000 lb or more, 60.80.

**Stannous Chloride (anhydrous):** Less than 25 b, 165.30; 25 lb, 130.30; 100 lb, 115.30; 400 lb, 112.90; 5200-19,600 lb, 100.70; 20,000 lb or more. 88.50.

Stannous Sulphate: Less than 50 lb, 128.10; 50 lb, 98.10; 100-1900 lb, 96.10; 2000 lb or more, lb, 98

Zinc Cyanide: 100-200 lb, 59.00; 300-900 lb, 57.00.

(Concluded from Page 171)

about a slow summer and anticipate no action until the mills start cleaning out present inventories.

The dealers think the worst of the scrap slump is over, and that prices will hold on a steady level for the next few months. slight price increase is expected on auto lists this week. Foundry grades are reflecting dealer optimism.

Buffalo — With steel production creeping up here, the tone of the local scrap market is improving. Most dealers think prices have hit bottom and that the next move will be on the up side. The firmer market tone has not yet resulted in any new buying. But higher prices at Youngstown are luring industrial material from this district, and this may bring an upward revision in local quotations.

District steel mills are holding sizable inventories. So they are in good position to bargain for new tonnage. Foundries are showing a little more interest in scrap.

Cincinnati — Despite continued absence of a buying test, the scrap market tone is firmer here. Traders anticipate an increase in prices next month, based on the rising trend in district steelmaking operations.

St. Louis—The scrap market undertone is firmer, but prices are unchanged. The strength is based on advancing prices in outside markets, such as Chicago and Peoria, Ill. The two large mills here show some interest in buying, but decline to pay the higher prices asked. Many dealers are holding their scrap for an expected price boost. There has been some minor trading in railroad heavy melting and bundles. Railroad specialties are up \$1 a ton.

Birmingham—Most major steel scrap consumers here filled their needs early this month, and they are now out of the market. Cast iron is moving satisfactorily, but export demand for that grade is absent. One large cast buyer last week altered his specifications to purchase No. 1 agricultural and machinery cast free of automotive cast. For this special grade, he is paying \$51, delivered plant.

Houston—Leading scrap consumers in the Southwest are out of the market. Twenty cars of heavy melting railroad scrap were successfully bid for a Mexican mill at \$36.30 delivered to the border at Laredo. The bid of a Texas mill was considerably less.

Not much scrap is coming out. Shippers have no unfilled commitments. Gulf Coast export activity is nil.

Except for cast iron, prices are nominal. Some foundry buying of clean cast and unstripped motor blocks is noted.

San Francisco—Steel ingot production is increasing in this area one district plant is engaged at 85 per cent of capacity. Scrap inventories are going down, but there is no strength in the scrap market, and expectations are that prices on the top grades will fall lower.

Los Angeles-Some foundries are buying limited amounts of scrap, but the steel mills are still depending on inventories for the bulk of their requirements. With significant demand lacking, the market undertone appears weaker.

## CLASSIFIED

#### Help Wanted

PROCESS METALLURGIST

Exceptional opportunity available for Metallurgical Engineer with administrative experience in development and production of Flat Rolled Electrical Steels. Send resume of education, experience and availability to Box No. 666, STEEL, Penton Bldg., Cleveland 13, Ohio.

#### Representatives Wanted

SALES REPRESENTATIVE
Nationally known Tungsten Carbide Manufacturer of Tungsten Carbide and Chrome Carbide
Dies, Tools and Wear Parts. Has opening for
sales representative in Midwest & West. Reply
Box 665, STEEL, Penton Bldg., Cleveland 13,

#### **Positions Wanted**

OPPORTUNITY WANTED

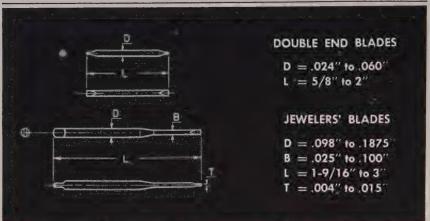
I offer successful top-level (15 years Vice President) foundry and manufacturing experience in finance, sales, purchasing, engineering, labor, production; capable, personable, graduate engineer; good organizer. I seek broad management responsibility, good potential income; willing to invest. Write Box 667, STEEL, Penton Bldg., Cleveland 13, Ohio.

ESTABLISHED SALES REPRESENTATIVE, Cleveland District, desires representation of steel foundry or allied line on commission basis. Have following. Reply Box 668, STEEL, Penton Bldg., Cleveland 13, Ohio.

CLASSIFIED RATES

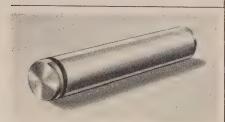
All classifications other than "Positions Wanted" set solid, 50 words or less \$15.00, each additional word .30, all capitals, 50 words or less \$19.20, each additional word .38; all capitals leaded, 50 words or less \$23.40, each additional word .47. "Positions Wanted" set solid, 25 words or less \$3.60, each additional word .14, all capitals, 25 words or less \$4.50, each additional word .18; all capital leaded, 25 words or less \$5.40, each additional word .22. Keyed eaddress takes seven words. Cash with order necessary on "Positions Wanted" advertisements. Replies forwarded without charge. Displayed classified rates on request. Address your copy and instructions to STEEL, Penton Building, Cleveland 13, Ohio.





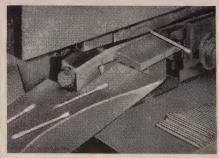
"Custom manufacture" has a special meaning at Torrington, where our Specialties Division produces a tremendous variety of small precision metal parts. For our engineers often help in designing parts for our customers, and as frequently develop special equipment or methods for most efficient production.

For example, one of our current contracts is for jewelers' screwdriver blades. In this case, our engineers decided to swage these parts to give the required highstrength characteristics without stress concentration points and tool marks. Other features of these parts are good dimensional accuracy and closely controlled heat treating for hardness and temper.



In another case, we received a blueprint of a special pinion axle with an accurately cut retaining ring groove at one end. The customer inquired whether this part could be produced at about the same price as a straight cylindrical axle with an uninterrupted OD. The answer was "Yes!" Specialties engineers decided that high-speed cutoff and groove-turning equipment would have to be built to cope with the high volume involved. Special pinion axles have now joined the great number of parts being produced by Torrington Specialties Division.

Whatever the part, whatever the operation—even operations tailored to the part requirements—Torrington's Specialties Division is uniquely equipped to handle your small precision parts contracts. Highly specialized fluting opera-



tions, for example, permit volume production to close tolerances. Precision swaging, knurling, forming, milling, drilling are among other operations for which we are fully equipped. Advanced heat treat and statistical quality control methods help provide the quality product you require.

For help with your custom-built small precision metal parts in large quantities, just circle our number on the reply card. Or have your Purchasing Agent call our area salesman, or write direct to:

The Torrington Company, Specialties Division, 900 Field Street, Torrington, Conn.

# TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

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you enjoy both hotel comforts, motel conveniences

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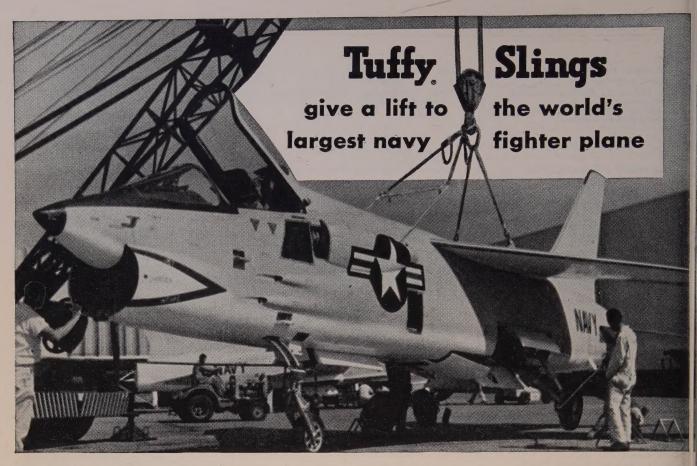
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With top speed a secret, the U.S. Navy's Chance Vought F8U-1 Crusader was the first aircraft to span the continent faster than the speed of sound. Now flying with Fleet squadrons on both the Atlantic and Pacific coasts, the F8U-1 operates in a new speed range far beyond the supersonic. President Eisenhower, aboard the Saratoga when one of the epic transcontinental flights landed, observed: "You almost got here before you left."

In the photo above, Tuffy Slings are being used in hoisting the plane. 18,829 lbs. of valuable aircraft are entrusted to the quality, strength and dependability of Tuffy Slings. We think it's a fine testimonial to the kind of slings and wire rope you get when you use Tuffy.

Tuffy Slings give you more sling efficiency and longer life because Tuffy's patented machine-braided fabric is the perfectly balanced combination of strength and flexibility. Their flexibility is such as to resist kinking. When kinks do occur, they are easily straightened without material damage. And the exclusive Tuffy pressed-on ferrule makes the eye-splice as strong as the fabric. For every sling need and any slings problem, get in touch with your Tuffy distributor.

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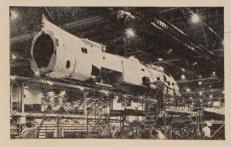
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Wire Rope Corporation

2160 Manchester Ave.

SUBSIDIARY RMC STEEL CORPORATION Kansas City 26, Missouri

Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand.



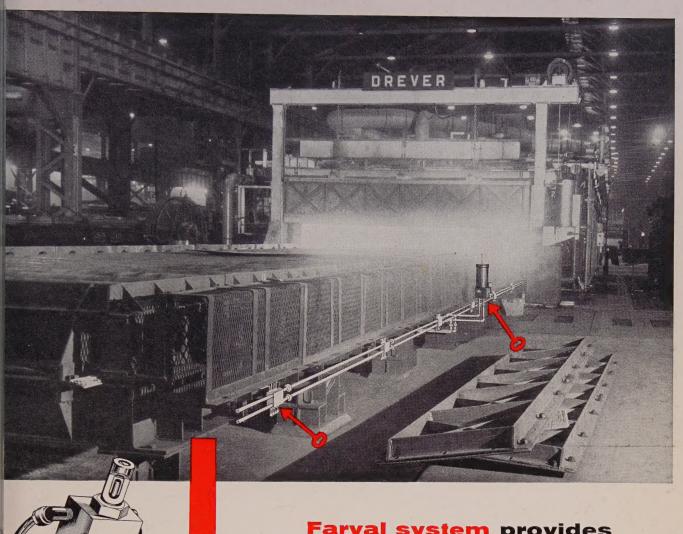
Tuffy Slings play a vital part in both production and operation of the Navy's F8U-1. Here the fuselage is suspended on a Tuffy sling assembly as it moves on the production line.



Tuffy is in the act again as the F8U-1 is set to catapult. Union Wire Rope also manufactures catapult slings used on U. S. Navy aircraft



The F8U-1, landing on carrier deck, is about to catch arresting cables such as Union Wire Rope Corporation also makes for the Navy. The plane in this operation weighs more than 12 tons



Farval system provides

continuous, precision lubrication

for huge heat-treat furnace

A MODERN Farval centralized lubrication system guards against premature bearing failure on both the approach and delivery tables of this huge, new 135-foot-long Drever continuous heat treating furnace now in operation at United States Steel's 160-inch plate mill. Its function is to harden armor plate, USS T-1 alloy and stainless steels—up to 45 feet long, 13 feet wide by 2 inches thick.

FARVAL
—Studies in
Centralized
Lubrication
No. 220

Farval's fool-proof Dualine system delivers just the right amount of clean lubricant to every bearing at regular intervals from a safely located central station.

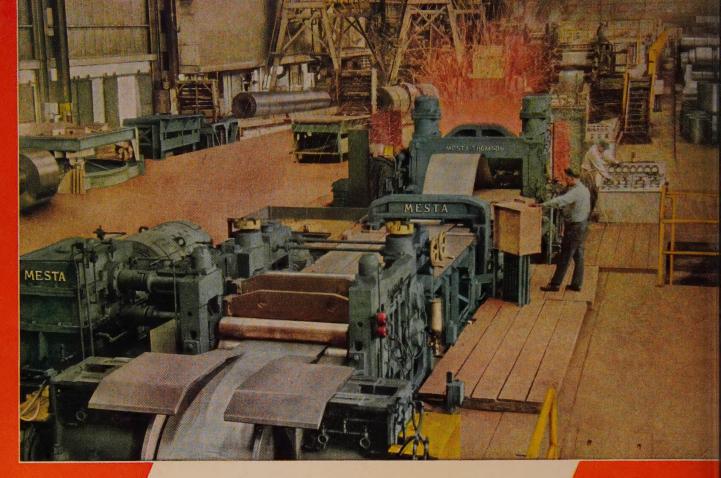
If you desire, we will have one of our specialists show how Farval centralized lubrication systems can save production hours, maintenance and labor in your own plant. Write today for revised Bulletin 26-S—it tells the complete Farval story. The Farval Corporation, 3270 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.

#### **KEYS TO ADEQUATE LUBRICATION**

—wherever you see the sign of Farval—familiar valve manifolds, dual lubricant lines and central pumping station—you know industrial equipment, such as this heat-treat furnace entry table, is being properly lubricated.

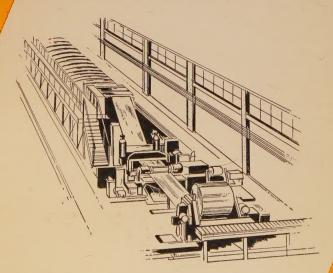




MESTA 48" Continuous Pickling Line with Primary and Secondary Processors, Flash Welder, Up-Cut Shears, Side Trimmer and Up-Coiler.

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